

Public Utilities

Volume 65 No. 8



April 14, 1960

WHAT'S BEHIND THE BURNS CREEK PROJECT?

By E. M. Naughton

« »

Tackling the Washington, D. C., Transit Problems

By Herbert Bratter

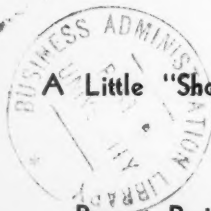
« »

A Little "Show Shop" Helps Off-job Safety

By John Mappelbeck

« »

Recent Periodical Reviews on Regulation



Profit: the Key to *Telephone Progress* *and Low Cost*

Maybe it's about time somebody stood up and said a good word about profits.

For the opportunity to earn a satisfactory profit is part of the very spirit of a free America. It is one of the basic things that have made this a great country.

Today, more than ever, the progress and prosperity of communities, states and nation are dependent on the number and the prosperity of their companies.

So the profit motive is important. Actually it is one of the great driving forces that stimulate inventions, new products, new services and new plants. And more and better jobs!

That is just as true of the telephone business as any other . . . and of added importance because of the vital nature of the service.

It is a satisfactory profit—and the hope of its continuance—that gives

us the money and the incentive to go ahead on a long-pull basis instead of in a more expensive short-term manner.

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We can act instead of hesitating to act. We can go forward instead of standing still. We can move from one achievement to another in the best interest of everybody.

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Public Utilities

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VOLUME 65

APRIL 14, 1960

NUMBER 8



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HIGHLIGHTS

SIGNIFICANT STATISTICS OF C-E REHEAT BOILERS* ORDERED IN '50s

Total number of units—256. Total capacity—36,555,250 kw. Avg. unit capacity—142,790 kw.

NUMBER OF UNITS

5-year periods	1450 PSI RANGE ⁽¹⁾		2000 PSI RANGE ⁽¹⁾		2400 PSI RANGE ⁽¹⁾		TOTAL UNITS	
	Natural Circulation	Controlled Circulation	Natural Circulation	Controlled Circulation	Natural Circulation	Controlled Circulation	Natural Circulation	Controlled Circulation
1950-1954	49	7	25	34	None	3	74	44
1955-1959	23	None	40	39	None	36	63	75
Total	72	7	65	73	0	39	137	119
GRAND TOTAL	79		138		39		256	

CAPACITY—KILOWATTS**

5-year periods	AVERAGE PER UNIT		LARGEST UNIT	
	Natural Circulation	Controlled Circulation	Natural Circulation	Controlled Circulation
1950-1954	7,720,750	6,635,250	104,335	150,800
1955-1959	6,649,000	15,550,250	105,540	207,335
Total	14,369,750	22,185,500	104,890	186,336
GRAND TOTAL	36,555,250		142,790	

Comments

Note that while average capacity of natural circulation boilers is about the same for both 5-year periods (104,335 and 105,540), the average capacity of controlled circulation boilers (150,800 and 207,335) increased nearly 40% in the second period.

Note, too, that while the total capacity of controlled circulation more than doubled in second period, the total capacity of natural circulation boilers decreased.

Of the total capacity of controlled circulation boilers purchased in second period, over 50% was in the 2400 psi range. Average unit capacity in this range was 217,380 kw.

*Exclusive of eighteen foreign units with an aggregate capacity of 2,000,000 kw. Also excludes six C-E Sulzer Monotube Steam Generators, three for supercritical and three for subcritical pressures, with aggregate capacity of 1,300,000 kw. Five Monotube units in operation.

**Turbine manufacturer's rating

Turbine throttle pressures

(1) 1250-1650 psi. (2) 1800-2100 psi. (3) 2350-2600 psi.

Top of the Biggest Decade in Power History

Progress in power generation moved forward at a spectacular pace in the fifties. Utility capacity increased from 61,700,000 kw at the end of 1949 to 158,800,000 kw at year end, 1959. Thus, in this one decade, capacity soared to a figure nearly two and a half times that achieved in the seven previous decades of the industry's existence . . . Here are some of the significant highlights of power progress in the fifties.

REHEAT CYCLE TAKES OVER...GIVES EFFICIENCY A BIG BOOST

Of the new steam capacity ordered in the past ten years, reheat units accounted for about 85% of the total. While other factors, notably higher pressures and temperatures, contributed to improved efficiency and economy, the widespread adoption of the reheat cycle was primarily responsible for reducing the industry's average heat rate from 15,053 Btu in 1949 to 10,900 (est.)

in 1959—a gain of nearly 30% . . . Combustion's first postwar reheat units were ordered in 1947 and installed in 1949—one at the Edgar Station of Boston Edison Company and one at the Port Washington Station of Wisconsin Electric Power Company. The impetus these initial installations gave to the adoption of reheat is revealed in the Table opposite.

CONTROLLED CIRCULATION SPARKS THE TREND TO HIGHER PRESSURES

The first postwar C-E Controlled Circulation Boiler was ordered in 1950 by the Virginia Electric & Power Company and installed in the Chesterfield Station in 1952. The many advantages of this design, especially its suitability for high pressures and large unit capacities, were quickly recognized. The result, as indicated

by the figures in the Table, was the most rapid and large-scale acceptance ever accorded a new design of utility boiler . . . The Table also discloses the marked trend toward higher pressures with 36 controlled circulation boilers in the 2400-psi class ordered in the past 5 years as against 3 in the preceding 5 years.

OUTDOOR PLANTS GROWING IN POPULARITY

Of 181 new power stations built in the fifties, slightly over half (92) are of outdoor or semi-outdoor construction . . . Many of these stations are in middle and northern states, including such far northern states as Minnesota, North Dakota and Montana. Thus, the

economy and practicability of outdoor construction is finding ever-increasing acceptance. Combustion made the initial boiler installations in over 40% of the new outdoor or semi-outdoor stations placed in service in the past decade.

NEW AVENUES TO FUTURE PROGRESS

Supercritical Pressures—In the history of power progress, the fifties will be credited as the pioneering period in supercritical pressures. Through its installations of two C-E Sulzer Monotube Steam Generators at the Eddystone Station of the Philadelphia Electric Company and one at the Avon Station of The Cleveland Electric Illuminating Company, Combustion is acquiring the technical knowledge and experience to keep pace with the adoption of supercritical pressures as the trend develops. Its Eddystone No. 1 installation marks the present pinnacle of progress in pressures and temperatures with steam conditions of 5000 psi and 1200 F.

Nuclear Power—The fifties will also be recognized as marking the first commercial applications of nuclear

power. Shippingport, for which C-E designed and built the reactor vessel, led the parade, achieving criticality in December, 1957, followed by Dresden in October, 1959 . . . Nearly a million kilowatts of commercial power is scheduled to go into operation in the early sixties . . . Combustion's subsidiary, General Nuclear Engineering Corporation, was recently awarded an AEC contract to design a boiling water reactor for the Puerto Rico Water Resources Authority to produce nuclear-generated superheated steam. GNEC made feasibility and preliminary design studies for this project and has made other extensive studies in the field of nuclear superheat. This work has special significance since nuclear superheat gives promise of appreciably reducing capital and fuel costs in atomic power plants.

COMBUSTION ENGINEERING

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C-254

TORS PER MILL EQUIPMENT; PULVERIZERS; FLASH DRYING SYSTEMS; PRESSURE VESSELS; SOIL PIPE

Pages with the Editors

RECENT studies of consolidations, mergers, and sales of corporate enterprises in the United States tend to show that they do not follow any steady pattern. On the contrary, they seem to come in waves. Paradoxically, perhaps, the waves occur during periods of relative prosperity. This is contrary to the orthodox Marxian view that hard times tend to consolidate and concentrate capitalist enterprises because of failures due to intensive competition.

In the public utility field, insulated perhaps by the advantages of service area monopoly and the stabilizing influence of commission regulation, the number of private companies in business has not changed a great deal over the past five years in the gas and electric field. For a variety of reasons, there has been unusual activity in the independent telephone field during this period.

In 1954, for example, there were 463 privately owned operating electric utility companies in the United States, compared with 456 in 1959—an erosion factor of less than 2 per cent. In the gas utility field there has even been an increase over a nearly similar period. Brown's *Directory of American Gas Companies* shows 970 gas companies in the United States prop-

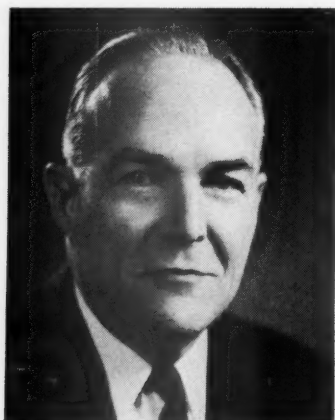
er for 1958, as compared with 956 for 1953. One major gas consolidation comes to mind, of course, with respect to the recent El Paso-Pacific Northwest Pipeline consolidation in the gas pipeline area.

THIS picture of slight change, involving no outstanding electric utility companies of major size, compares with a somewhat more pronounced downward trend in municipally owned electric utilities. These numbered 1,950 in 1954, as against 1,875 in 1959, an erosion factor of approximately 4 per cent, doubtless due to annexations by our expanding larger cities.

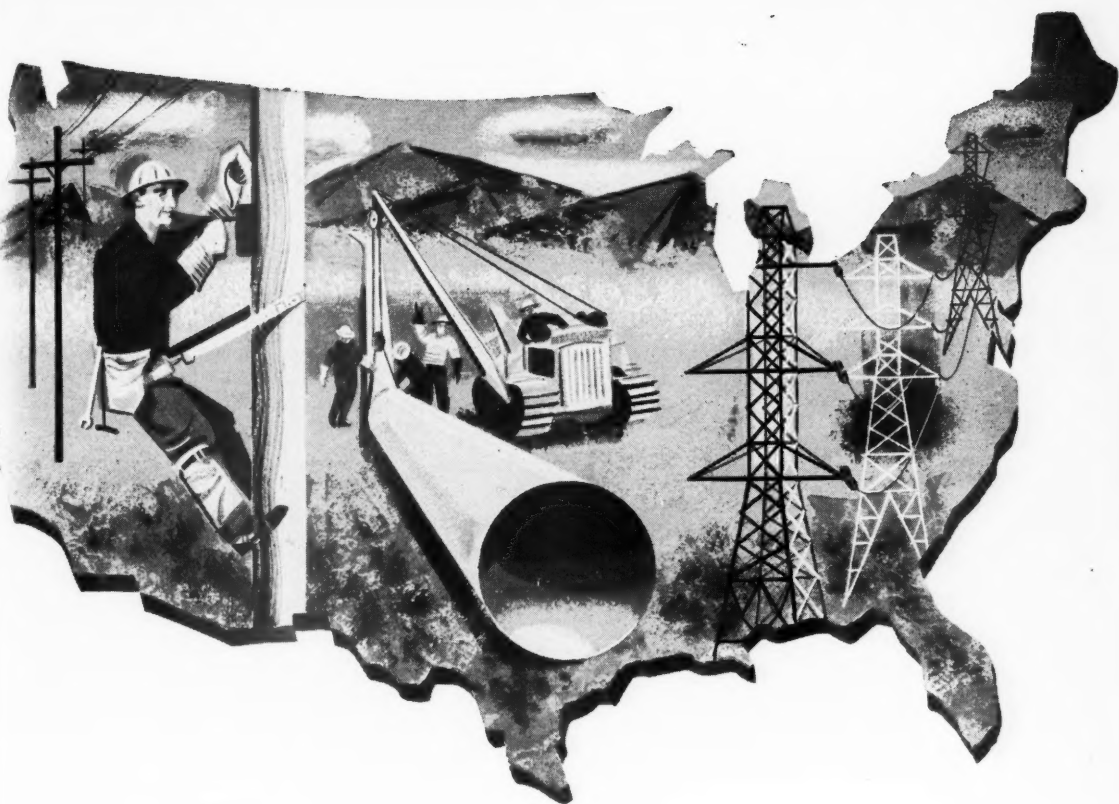
As stated, in the field of independent telephony there has been a steady downward trend in the number of companies, the total of which at the end of 1959 was 3,560, as compared with 3,876 in 1958. These figures, as reported by the United States Independent Telephone Association, represent a loss of 316 companies or about 9 per cent in a single year. (The number of Bell companies remains the same as it has for a decade—23 operating companies.)

ONE may wonder whether the factor of increasing cost may not some day require a second look at, if not a revision of, the Public Utility Holding Company Act. With the optimum efficiency of generating plants increasing as to size (and expense) by leaps and bounds, considering the terrific cost of such plants and such development projects as atomic plants, the need for pooling industry resources from a number of companies (to finance a common source of supply) becomes apparent.

ODDLY enough, this could result in increasing the actual number of companies, through the well-known process of creating generating subsidiaries. But if that



E. M. NAUGHTON



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HERBERT BRATTER

course were taken, the restrictions of the Holding Company Act would have to be reckoned with. On the other hand, outright consolidation along intrastate lines could result in *reducing* the number of companies.

YET, overall figures in nonregulated industries show a steady increase in the number of small businesses, especially family businesses employing less than 500 people, or retail concerns with less than a million dollars gross. Such small businesses numbered 3.2 million before World War II but only 2.9 million during the war and now they are up to 4.5 million as of 1959. So there is still plenty of punch, on the local level, in the enterprise system. The tides of inflation and deflation may advance and recede but the stubborn fact is that there have never been as many business concerns in operation as there are today.

THE leading article in this issue on the Burns Creek project deals with a very important development about which comparatively little is known. The author is E. M. NAUGHTON, president and general manager of the Utah Power & Light Company. He frankly concedes that he has an interesting point of view, but because he has been so close to this matter, it is necessarily an informed one. He has been associated with the electric industry for thirty-four years. He is a native of Waxahachie, Texas, and a me-

chanical engineering graduate of the University of Notre Dame. He joined the Texas Power & Light Company before coming to the Utah Power & Light Company in 1935. He became vice president and general manager in 1953 and president the following year.

* * * *

WITH the exception of the ideologically torn East and West Berlin, there is probably no modern metropolitan area with as many legal and political complications of a jurisdictional nature as our nation's capital, Washington, D. C., and its environs. Daily, over a half-million commuters stream in and out from the surrounding counties of Maryland and Virginia. The District of Columbia itself is a unique political subdivision of the federal government with only limited powers in the local board of commissioners and with remaining authority in an overworked Congress.

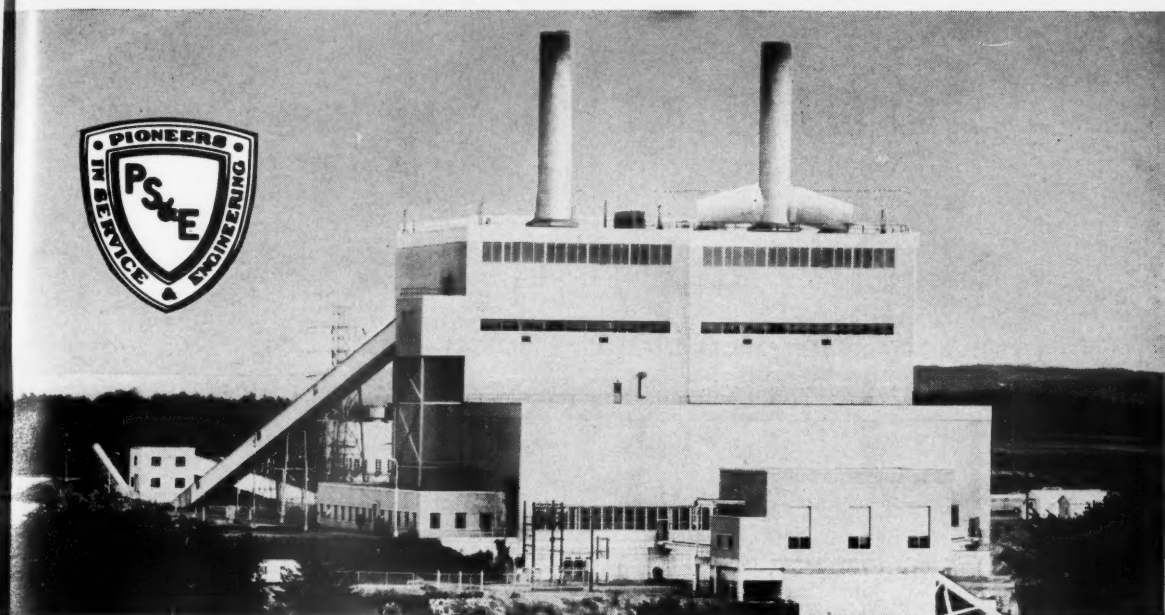
It necessarily follows that any attempt to solve the transit and transportation puzzle of the capital city is going to run into complications—plenty of them. The article beginning on page 517 is an interview by HERBERT BRATTER, Washington, D. C., economist and author of business articles, with Frederick Gutheim, staff director of the congressional Joint Committee on Washington Metropolitan Problems.

* * * *

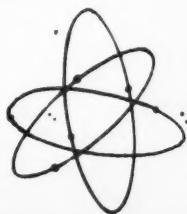
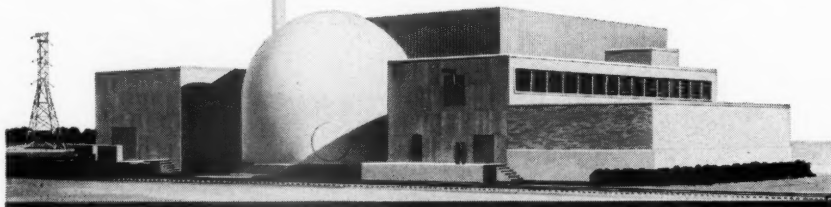
THE Bell telephone companies, along with other business management, have begun to recognize off-the-job accidents because they are costing them money in terms of employee absenteeism. JOHN MAPPELBECK, author of business articles, has checked into a new teaching technique which one Bell company management has found to be quite effective through the use of the Hollywood touch.

THE next number of this magazine will be out April 28th.

The Editors



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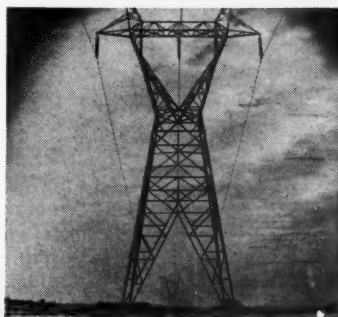
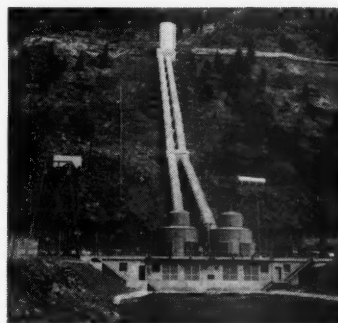
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Coming IN THE NEXT ISSUE

(April 28, 1960, issue)



WHY NOT PRIVATE PLACEMENTS FOR UTILITY SHARES?

For a good many years insurance companies and other institutional investors have had a mutually beneficial arrangement with utility companies for the private placement of senior securities. By using advance negotiation instead of competitive bidding, utility companies on the one hand have been saved expense and the burden of detailed regulatory control, while the large investors on the other hand have had access to safe and assured repositories for revenue-producing investment. Willard F. Stanley, president, Corporate Services, Inc., New York, now suggests that private placement of security issues be extended to the common stocks of public utilities. This author thinks that the savings and mutual benefits would be even more extensive than in the case of senior securities. He outlines advantages and methods by which such negotiations could be made more attractive.

OBSOLESCENCE versus TAX DEPRECIATION FOR ELECTRIC UTILITIES

Under the Internal Revenue Code factors to be considered in determining life expectancy for purposes of tax depreciation include progress of the art of economic changes, inventions, and other developments within an industry or a particular taxpayer's business which could result in plant obsolescence. C. P. Guercken, assistant to the vice president of Ebasco Services Incorporated, thinks that the increased rates and growth of electric utilities, coupled with technological developments, point to a higher depreciation division for tax purposes to compensate investors for increased business risks in the industry's future. Crippling inflation, wherein the value of the dollar has eroded at an annual rate of 3 to 4 per cent, has now become part of the national economic picture. This article suggests that present tax depreciation rates used in measuring lives of electric utility property are inadequate.

SHOULD WE SAVE URBAN TRANSIT, AND HOW?

It goes without saying that the preference of the general public for unrestricted private automobile transportation is a ready explanation for the struggle for survival which faces mass transportation carriers in metropolitan areas. But such an answer is oversimplification. It is not what the public prefers but what the economic security of the metropolitan area requires which should be given paramount consideration. Dr. Charles E. Stonier, associate professor of economics and marketing and consultant in transportation, at Hofstra College, Hempstead, New York, thinks that one of the great problems of our day is the recognition of the need for retaining urban transportation service. He outlines various methods, including federal aid, state aid, local tax forgiveness, and outright subsidy, along with restrictions on the use of private automobiles.



Also . . . Special financial news, digests, and interpretations of court and commission decisions, general news happenings, reviews, Washington gossip, and other features of interest to public utility regulators, companies, executives, financial experts, employees, investors, and others.

The tool chest that travels Not since the invention of the dog muzzle has anything been as warmly welcomed by servicemen as the new 1960 Dodge Tradesman.

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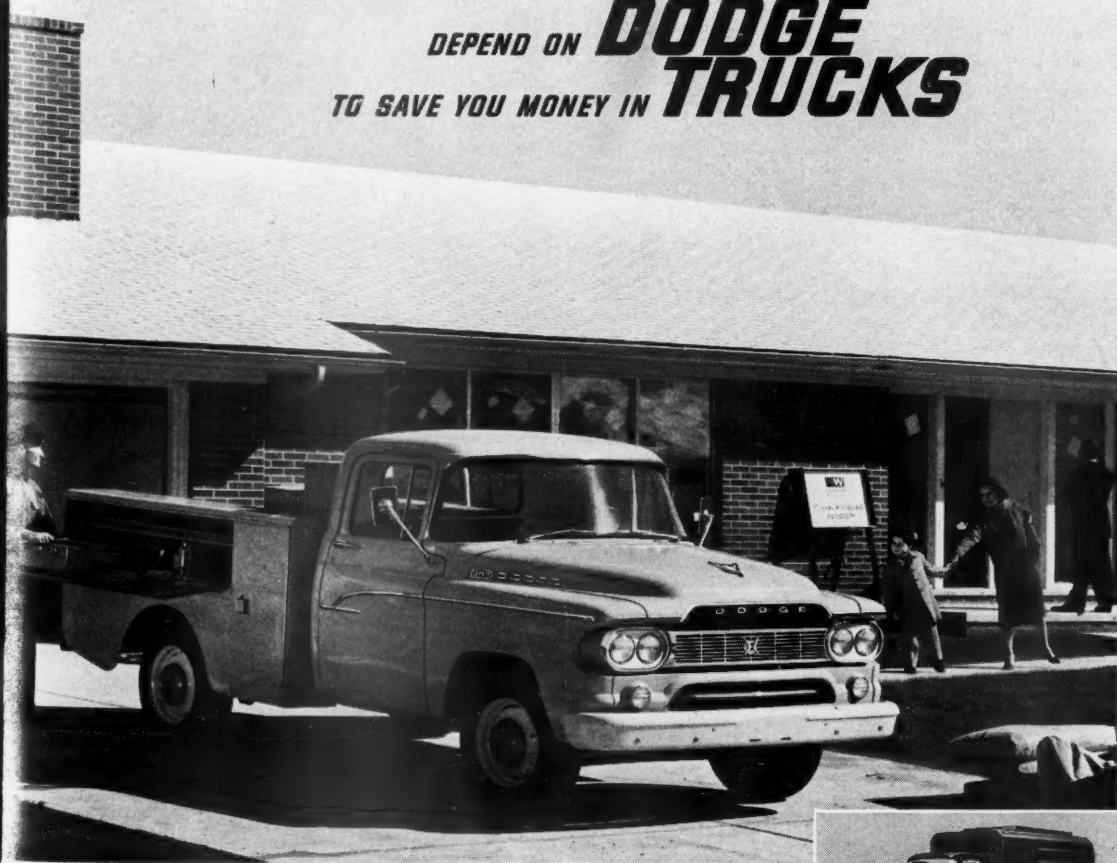
Its vertical and horizontal compartments carry most of the tools you'll need on any job—and keeps them *locked up*. Swing down the horizontal door, and you've made yourself a handy workbench.

Plenty of pick-up load space, too—with lockable sliding roof available to keep whatever you carry safe and dry.

Options? How about power steering . . . push-button transmission . . . choice of gas-squeezin' Six or powerful V-8?

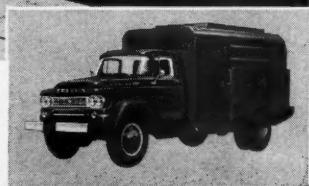
Your Dodge dealer can tell you even *more* good things about it. Talk to him—find out why you can always . . .

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HENRY CABOT LODGE
*United States Ambassador
to the United Nations.*

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ROBERT W. FRENCH
President, Tax Foundation.

"Failure to grapple squarely with the problem of mounting taxes, expenditures, and debt during the past three decades has produced a growing crisis in fiscal responsibility at all levels of government. Unless the nation faces up to this crisis, it must soon accept a fundamentally different form of government from the one envisioned by the founders of the Republic."

ROBERT E. WILSON
*Chairman of the board, Standard
Oil Company (Indiana).*

"The sums of money required for *capital investment* in industrial expansion and for the creation of new jobs will be available only if individuals are free to save and only if corporations have a chance to earn a *profit* that makes them willing to assume the necessary risks. Another requirement is that a fair share of the earnings can be retained and not confiscated by discriminatory tax rates and double taxation of dividends. Take away these incentives and you endanger the whole fabric of the economy that has already given so much to so many millions of Americans."

RAYMOND W. GOLDSMITH
*Professor of economics,
New York University.*

"We shall have to get rid of the notion—deeply ingrained, I am afraid, not only in many, if not most, of our economists, but even much more in businessmen and in the man on the street—that our rate of growth is naturally the most rapid in the world. That notion, however, now has no basis in reality. Whatever way you interpret the postwar record, it certainly does not show us as having a more rapid rate of growth than all the rest of the world or even than most of the world. Rather, it's the other way around. I would say it is not likely that this relation will change in the next decade."

GEORGE P. HITCHINGS
*Manager, economic analysis department,
Ford Motor Company.*

"Higher pay rates can provide more real buying power for the total economy only if they reflect an increase in output per man-hour. It is this that makes possible economic growth. Benefits of increased productivity must then flow to owners, employees, and customers in such a way as to stimulate markets and provide incentive for future productive efforts. Higher pay rates are not the casual factor, except where a redistribution of the income flow from one group to another stimulates total buying and output. Each proposal to expand the economy by taking from one group to give to another must be carefully examined as to the impact on buying of the group whose share is reduced."

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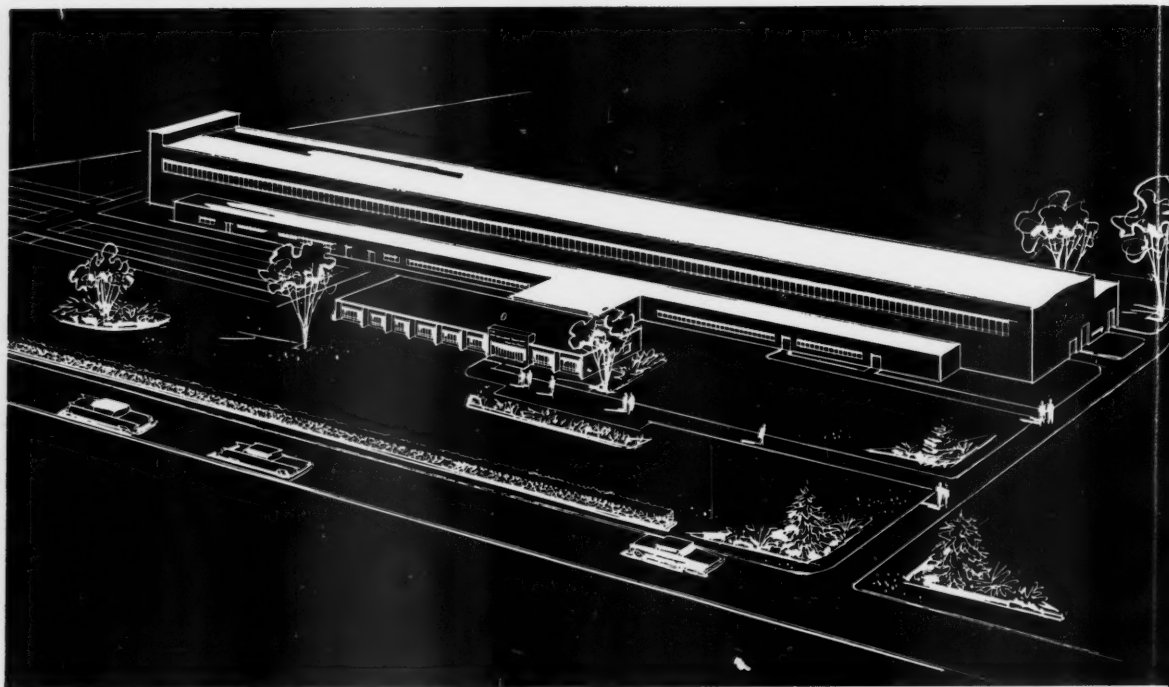
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To Serve Electric



Artist's conception of Kellogg's new Power Piping Division headquarters and plant at Williamsport, Pennsylvania. The entire site covers about 50 acres.



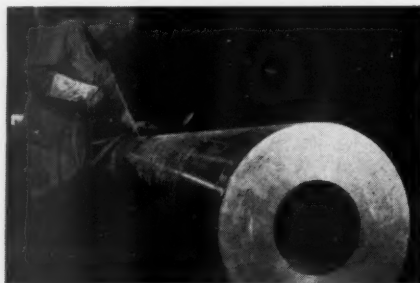
As operating temperatures and pressures increase in central power generating stations, the need for stronger and superior materials, and for better methods of manufacturing power piping systems, becomes more acute.

To help solve these problems, The M. W. Kellogg Company's Power Piping Division is building new metallurgical and welding laboratories as part of its complete manufacturing facilities at Williamsport.

The laboratory facilities and personnel, in addition to performing applied research and development for manufacturing power piping, will be available for consultation with clients on their problems and will act as a customer service laboratory.



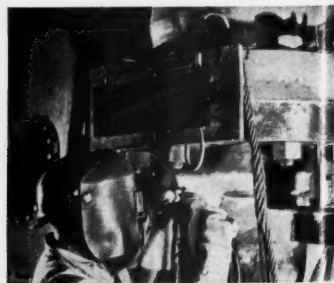
In the laboratory, a Kellogg metallurgist places sample of austenitic steel in heat-treating furnace. After heat treatment, the steel sample will be cut into sections and tested.



In the welding shop, two heavy-walled sections of stainless steel power piping are joined by K-Weld—an inert gas-shielded technique of arc welding, patented by Kellogg, which assures long life.



In the pipe bending shop, a length of stainless steel piping is bent to close tolerances. Inert gas retained in pipe retains inert gas introduced during heat treating to prevent oxidation.



In the customer's plant, a Kellogg operator uses K-Weld to install heavy sections of power piping which carry superheated steam from boilers to generators.

J
P

To still
over 40
Compa
William

Pla
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1964, 1966

Utilities Still Better

Power Piping Division of M. W. Kellogg is Building New Headquarters and Manufacturing Plant in Pennsylvania

To still further improve the service it has given to electric utilities for over 40 years, the Power Piping Division of The M. W. Kellogg Company is now building new headquarters and a plant at Williamsport, Pennsylvania.

Planned for completion by Labor Day, the plant will specialize in the manufacture of high pressure, high temperature alloy and carbon steel piping for electric generating stations. Centrally located in Pennsylvania, Kellogg's Williamsport plant will be within easy distance from many Eastern industrial centers. From here, it is well situated to serve clients by road, rail, or air.

Representing an investment of approximately \$4 million, these new facilities will have no equal in the power piping industry. Incorporating the most modern and time-saving equipment, the facilities have been designed throughout for maximum efficiency and economy.

With completion of its new plant, Kellogg will be better equipped than ever to tackle all orders for power piping promptly, and to carry them through to actual installations in customers' central stations from coast to coast.

At its new plant, Kellogg will have the engineering skills to manufacture complex piping systems; the men and equipment to cut, machine, bend, weld and heat treat piping of varying sizes and wall thicknesses.

Here, Kellogg will have the equipment to make electronic, radiographic, ultrasonic and other advanced tests to inspect the quality of the finished product. Here, it will have the metallurgical and welding laboratories to evaluate new and superior piping materials; to maintain a continuing program of development in welding and other manufacturing techniques, and add still further to its line of industry "firsts" listed at the right.

Kellogg's Power Piping Division welcomes inquiries on its new facilities from engineers of power generating companies, consulting engineers, and manufacturers of turbines, boilers, and allied equipment.

OTHER KELLOGG FIRSTS IN POWER PIPING

In 1931, Kellogg manufactured the first all-welded piping for the first high-temperature, high-pressure central station in the United States. Kellogg manufactured the first austenitic steel piping for a central station installation and has been continually experimenting since to establish the best materials, manufacturing techniques and heating cycles for welding and post-welding treatment, and to set specifications for electrodes.

FIRST IN MANUFACTURING OF:


- Piping from C 1/2% Mo
- Station piping for 900 F.
- Station piping for 950 F.
- Station piping for 2200 psi
- C 1/2% Mo piping with #3-#5 actual grain size
- 1/4% Cr-1/2% Mo steam piping
- Steam piping for 1000 F.
- 1/2% Cr-1/2% Mo station piping
- 2% Cr-1/2% Mo station piping
- Station piping for 1000 F.
- 2 1/4% Cr-1% Mo station piping
- 1 1/4% Cr-1/2% Mo station piping
- 1% Cr-1% Mo V turbine piping
- 2 1/4% Cr-1% Mo V station piping
- Station piping for 1050 F.
- 3% Cr-1% Mo station piping
- Type 347 stainless turbine piping
- Mercury vapor piping for 1000 F.
- Station piping for 1003 F. for France
- Type 347 stainless station piping
- Station piping for 1100 F.
- Type 316 stainless station piping
- Type 316 stainless station piping for 3500 psi-1050 F., 325 MW
- Type 316 stainless station piping for 5600 psi-1200 F., 325 MW



POWER PIPING DIVISION • THE M. W. KELLOGG COMPANY

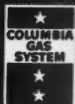
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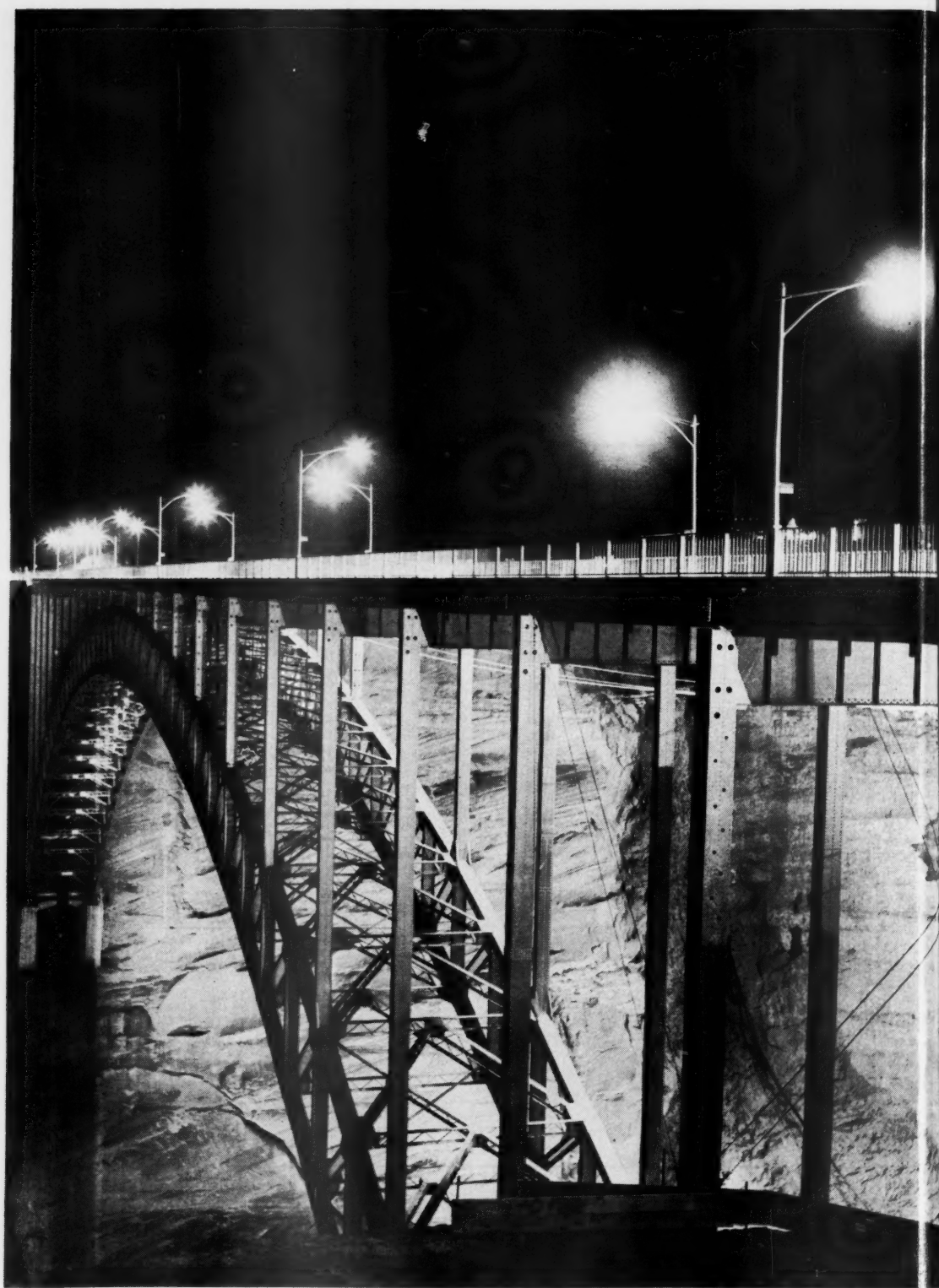
PUBLIC UTILITIES FORTNIGHTLY—APRIL 14, 1964

UTILITIES

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APRIL

Thursday—14 <i>Petroleum Industry Electrical Association-Petroleum Electrical Suppliers Association end three-day annual convention, Kansas City, Mo.</i>	Friday—15 <i>National Sales Executives-International begins spring finance and executive committee meeting, Minneapolis, Minn.</i>	Saturday—16 <i>American Public Relations Association ends four-day conference, White Sulphur Springs, W. Va.</i>	Sunday—17 <i>Chamber of Commerce of the United States will hold annual meeting, Washington, D. C. May 1-4. Advance notice.</i>
Monday—18 <i>American Institute of Architects begins annual meeting, San Francisco, Cal.</i> 	Tuesday—19 <i>National Association of Railroad and Utilities Commissioners, Committee on Accounts and Statistics, begins meeting, Indianapolis, Ind.</i>	Wednesday—20 <i>Nebraska Telephone Association ends two-day annual convention, Omaha, Neb.</i>	Thursday—21 <i>Indiana Gas Association begins meeting, French Lick, Ind.</i>
Friday—22 <i>American Water Works Association, Kansas Section, ends three-day annual meeting, Emporia, Kan.</i>	Saturday—23 <i>National Association of Electrical Distributors will hold annual convention, Dallas, Tex. May 1-4. Advance notice.</i>	Sunday—24 <i>Great Lakes Conference of Railroad and Utilities Commissioners begins annual meeting, White Sulphur Springs, W. Va.</i>	Monday—25 <i>American Welding Society begins annual convention, Los Angeles, Cal.</i> 
Tuesday—26 <i>Independent Petroleum Association of America ends three-day midyear meeting, Denver, Colo.</i>	Wednesday—27 <i>Southern Gas Association ends three-day annual convention, Galveston, Tex.</i>	Thursday—28 <i>American Water Works Association, Arizona Section, begins three-day annual meeting, Tucson, Ariz.</i>	Friday—29 <i>Instrument Society of America ends three-day first pulp and paper instrumentation symposium, Pensacola, Fla.</i>



Courtesy, Arizona Public Service Company

A Well-illuminated Canyon Bridge

This is America's highest and second longest steel arch bridge. It crosses 700 feet above the Colorado river, near site of Glen Canyon dam. It is lighted by 25 mercury-vapor street lamps.

Public Utilities

FORTNIGHTLY

VOLUME 65

APRIL 14, 1960

NUMBER 8



What's behind the Burns Creek Project?

By E. M. NAUGHTON*

President and general manager, Utah Power & Light Company

The author cites chapter and verse to suggest that the Burns Creek project cannot justify itself as a reclamation undertaking. He contends that revenues obtained by the Palisades dam power plant for reclamation purposes would be used to subsidize the Burns Creek hydroelectric project, the primary purpose of which is to supply preference customers with power.

WHY all the interest in the Burns Creek project? The answer, briefly stated, is an attempt on the part of proponents and the Bureau of Reclamation to have the government assume a continuing utility responsibility to furnish the electric power requirements of a few preference customers under the guise of reclamation. The new concept

suggested by this proposed project deserves the attention of all parties interested in preventing the socialization of the electric power industry in this country.

Just what is the proposed Burns Creek project? It is a project sponsored by the Bureau of Reclamation to be constructed on the Snake river in southeastern Idaho. The project would consist of a dam 176 feet high to store 234,000 acre-feet of

*For additional personal note, see "Pages with the Editors."

PUBLIC UTILITIES FORTNIGHTLY

water (17,000 acre-feet for river reregulation, 117,000 acre-feet for power head, and 100,000 acre-feet for supplemental irrigation) and a 90,000-kilowatt hydroelectric power plant. The total cost at present price levels is estimated at \$48.8 million, of which 98.2 per cent is allocated to power.

Two bills have been introduced in the 86th Congress to authorize the Burns Creek project: S 281 in the Senate and HR 1235 in the House of Representatives. The titles of these two bills are identical and read as follows:

To authorize the Secretary of the Interior to construct, operate, and maintain a reregulating reservoir and other works at the Burns Creek site in the upper Snake river valley, Idaho, and for other purposes.

This is an innocuous title. A careful analysis of the Bureau of Reclamation's studies, and cost allocations made to support the project, however, coupled with testimony given by Bureau of Reclamation representatives and others before the Senate Subcommittee on Irrigation and Reclamation, indicate that the primary purpose for the construction of the Burns Creek project is to provide an additional supply of government power to a few preference customers in the area. Such additional power, moreover, would be sold for less than it costs to produce it.

S 281 was passed by the Senate on July 24, 1959.¹ Perhaps it just happened that this was a Friday and the bill came

up for consideration late in the afternoon when a mere handful of Senators were present. To some people, however, it seems that this procedure was prearranged. After Senate passage, this bill, together with the House bill, HR 1235, were, at this writing, both before the House Subcommittee on Irrigation and Reclamation.

IN the closing days of the first session of the 86th Congress a sudden hearing was called, but by that time sufficient interest had developed against passage of the legislation and enough parties had asked to appear as witnesses before the committee that the chairman decided to adjourn the hearing with the understanding that nothing would be done with the two bills until a further opportunity for hearing.

Burns Creek would be located 30 miles downstream from the existing Bureau of Reclamation Palisades project. The bureau proposes to integrate Burns Creek "financially, hydraulically, and electrically" with the Palisades project. To understand the import of the Burns Creek project, one must really be informed about the Palisades project.

The Palisades Story

THE Palisades project, located on the Snake river in southeastern Idaho just below the Idaho-Wyoming state line, was authorized by the Congress in 1941. Because of World War II it remained dormant until it was reauthorized in 1950 and completed in 1958. This is a multi-purpose project. It provides for flood control, irrigation, and power production, with 1,217,810 acre-feet of storage water

¹ The Senate debate on it is contained in the *Congressional Record* of that date, beginning at page 12980.

WHAT'S BEHIND THE BURNS CREEK PROJECT?

for supplemental use on 650,000 acres of land. The irrigation of 48,000 acres of new land was made possible. Early plans for power at Palisades called for the installation of approximately 30,000 kilowatts of capacity which would be able to utilize the full winter flow of the Snake, would provide firm power in an adverse year for about 15,000 kilowatts average, and could be load factored to meet firm load requirements to about 30,000 kilowatts.

SUBSEQUENT to World War II, development by private industry in the area north of the Snake river proved there were large quantities of underground water that could be pumped economically by use of electric power to irrigate the rich lands in the area. Even though the underground pumping was being actively developed by the Idaho Power Company, the Bureau of Reclamation designed a project known as the Minidoka North Side pumping project and, to provide secondary or summer pumping power for this project, increased the generating capability planned for Palisades from 30,000 to 114,000 kilowatts. Upon this basis the Palisades project was reauthorized.

ACTIVE support for the Palisades project came from not only the water users and reclamation people in the area, but the private electric power companies as well, because it was clear to all concerned that Palisades was a project in keeping with the true spirit and concept of the reclamation laws.

In order to make the project economically feasible, it was necessary to dispose of the total output of the Palisades power plant. The Idaho Power Company and the Utah Power & Light Company contracted to buy the dump power and the firm power not used by the preference customers to which it was allocated. Without the market provided by the two private companies, it is doubtful whether the Palisades project would have been feasible since about half of Palisades revenue comes from this source. The firm power was allocated to three preference customers.²

Although there were other preference customers available, the three who received the allocation were the only ones

² Preference customers, under federal power project laws, are publicly owned electric distribution agencies or co-operatives which have a priority over privately owned electric utility companies in the purchase of power from the government.

Cities Get Government Power

"OVER half of the power produced by the government in the area is allocated to three municipalities, the city of Idaho Falls, the city of Burley, and the city of Rupert. These three cities are allocated 31,000 kilowatts out of a possible 49,840 kilowatts of wintertime power and 25,900 kilowatts out of a total of 51,810 kilowatts in the summertime. And, with the 30,000 kilowatts available from the Idaho Power Company-bureau integration agreement, they will receive 34,510 kilowatts out of a total of 82,000 kilowatts summertime power and 46,300 kilowatts out of 80,000 kilowatts of wintertime power."

PUBLIC UTILITIES FORTNIGHTLY

that evidenced any interest in such power at the time the project was first authorized.

The increase in electric loads in southeastern Idaho, of preference customers as well as those supplied by private electric utilities, has been continuous and substantial during the past fifteen years. The preference customers could foresee their loads growing beyond the amounts which the existing projects of the Bureau of Reclamation could supply, and actively started seeking new sources of government power. The first Burns Creek bill was introduced in the Congress in 1957. It was actively supported by the Bureau of Reclamation. The bill died, but neither the preference customers nor the bureau gave up.

Reregulation, Fact or Subterfuge?

THE possibility of rather wide fluctuations of flow downstream from the Palisades dam was suggested at the time the Palisades legislation was considered. It was represented that a small reregulating reservoir would prevent any damage to downstream irrigation works caused by fluctuation. The Bureau of Reclamation later estimated that such an adequate reregulating reservoir could be provided at a cost of \$2,128,000. The reregulating reservoir was omitted pending proof as to its need, and to date the necessity for it has by no means been proven.

In 1953, in hearings before the Subcommittee on Interior Department of the Committee on Appropriations, House of Representatives, 82nd Congress, an Assistant Commissioner of the Bureau of

Reclamation testified regarding the operation of the Palisades project:³

The normal production of power at Palisades dam will be entirely incidental to the operation of the reservoir for irrigation and flood control. The production of firm power is normally possible only because a certain amount of water must be passed through the reservoir during the winter to fill the prior storage right of American Falls reservoir. During the spring and summer months, the releases for flood control and for irrigation will be utilized for production of secondary commercial and irrigation pumping power to the extent of the turbine capacities.

In order to obtain the maximum benefits from Palisades for irrigation, flood control, and power, a plan of operation will be adopted which will provide for full co-ordination of the Palisades storage and power plant of the Snake river system. *Maximum system power benefits are obtainable by integrating the Palisades plant electrically and hydraulically with the other plants and reservoirs in the system.*

Now proponents of Burns Creek want to justify that project on the basis that the total electric benefits cannot be obtained from Palisades unless Burns Creek is built downstream to provide reregulation.

Certainly the need for any river reregulation has not been proven. Since going into operation, the Palisades plant has been operated by the Bureau of Reclamation in the wintertime to carry

³ Assistant Commissioner Kenneth W. Markwell, p. 887.

WHAT'S BEHIND THE BURNS CREEK PROJECT?

all peak loads of the preference customers who have contracted for the total firm power output of Palisades plant. Furthermore, the Bureau of Reclamation has very recently entered into an integration agreement with the Idaho Power Company providing for firming up the bureau's plants in the area, which seems to bear some relationship to the above testimony and would make the need for a reregulation reservoir nonexistent.

EVEN if the need for any reregulation should, by some stretch of the imagination, be justified, a 17,000-acre-foot re-

regulation reservoir could be built, based on present-day price levels, for \$5 to \$6 million rather than the almost \$50 million Burns Creek will cost. Furthermore, the installation of a 90,000-kilowatt hydro plant downstream from Palisades is not consistent with the stated need for Burns Creek, which is supposed to be reregulation. The operation of a 90,000-kilowatt hydro power plant at Burns Creek would require about the same amount of water at full load as is passed through the 114,000-kilowatt Palisades plant. Consequently, if the argument be valid, that in order to obtain the maximum power bene-

Not One Penny Provided for Reregulation

"NOW proponents of Burns Creek want to justify that project on the basis that the total electric benefits cannot be obtained from Palisades unless Burns Creek is built downstream to provide reregulation. Certainly the need for any river reregulation has not been proven. Since going into operation, the Palisades plant has been operated by the Bureau of Reclamation in the wintertime to carry all peak loads of the preference customers who have contracted for the total firm power output of Palisades plant. . . . **Not one penny of the \$48.8 million cost of the [Burns Creek] project is allocated to reregulation.** In allocating the costs the Bureau of Reclamation has allocated \$47,872,000 or 98.2 per cent to power, \$849,000 or 1.7 per cent to irrigation, and \$49,000 or 0.1 per cent to recreation."



PUBLIC UTILITIES FORTNIGHTLY

fits from Palisades, reregulation is required, the same argument would be equally valid for Burns Creek and a reregulation reservoir would be required downstream from that project.

Probably a realistic indication of the need for reregulation and an exact measure of true value which is placed on the reregulation function by the project sponsors is the allocation for this function in the economic analysis.

Not one penny of the \$48.8 million cost of the (Burns Creek) project is allocated to reregulation. In allocating the costs the Bureau of Reclamation has assigned \$47,872,000 or 98.2 per cent to power, \$849,000 or 1.7 per cent to irrigation, and \$49,000 or 0.1 per cent to recreation.

Irrigation Benefits Insignificant

THE irrigation benefits claimed for the project are very minor. Not one acre of new land would be brought under cultivation. According to testimony by Bureau of Reclamation officials before congressional committees,⁴ 100,000 acre-feet of storage would have a use only "two or three times in fifty years" as supplemental irrigation water. Present storage on this section of the Snake river is approximately 4.5 million acre-feet and Burns Creek would provide only an additional 100,000 acre-feet for supplemental purposes.

Here, again, the true measure of the value of the project's use has been indicated by the allocation of the cost. In the economic analysis the Bureau of Recla-

mation has allocated only \$849,000 or 1.7 per cent to irrigation, and of this small amount only \$750,000 would be repaid by the water users, and this over a 40-year period at the rate of 19 cents per acre-foot per year. This clearly shows the little value the alleged irrigation features of the Burns Creek project would have to the irrigators in the area.

Real Reason for Burns Creek

THE real purpose for constructing Burns Creek becomes apparent when one considers that 98.2 per cent of the total cost of the project is allocated to power. Ninety thousand (90,000) kilowatts of power would be developed and sold in an area where no power shortage exists and where there is no likelihood of any power shortage in the foreseeable future. In fact, at the present time there is considerable surplus of power. Form 12 reports filed with the Federal Power Commission by private electric utilities showed that in the year 1959 there would be a surplus of approximately 400,000 kilowatts in the area served by Burns Creek and that a surplus will continue at about this same level for several years to come.

The only power shortage which could possibly exist would be a shortage of government power for a group of preference customers in the area who, in recent years, have secured most of their power requirements from the federal government, and who apparently feel the federal government must supply all their future requirements.

THE true reason for the Burns Creek project became clear at hearings be-

⁴ Harold Nelson, regional director, Region 1, hearings before Senate Subcommittee on Irrigation and Reclamation, May 22, 1957, p. 20.

WHAT'S BEHIND THE BURNS CREEK PROJECT?

fore the Senate Subcommittee on Irrigation and Reclamation of the Interior and Insular Affairs Committee in May, 1959, when a bureau witness testified:

It seems to me that the big problem which is to be considered here, recognizing, as I do, being a former Wyomingite, having been born and raised and lived most of my life there, is seeing that the resources of Wyoming are developed, but I am not able to see on the basis of the information available to me today how the construction of Burns Creek could have any possible effect on the construction of the proposed steam plant at Kemmerer.

I think they are two completely unrelated and different problems. Mr. Nelson has recently analyzed the power loads to be anticipated from the existing customers, if you please, that are now customers of the federal government in southern Idaho, and he finds that in order to meet that load alone we must have Burns Creek on the line starting in 1966 and that their loads will exceed the capabilities of the combined federal system in southern Idaho by about 1972.

The fact that some of these preference customers once received their power from nongovernment sources and would have to rely again on such sources if Burns Creek is not built has been ignored. This implies a distortion of the true concept of reclamation.

If this concept be followed out, it could mean only that once the preference customer had obtained government power from a multipurpose reclamation project, the bureau would have the continuing responsibility to supply power, be it hydro or steam, to meet the future requirements of such a customer. Is this what Congress intends?

Would Subsidize Uneconomical Power

THE proposed Burns Creek project is not only a power project but a very uneconomical project as well.

The total increase in revenues resulting from the construction of Burns Creek is estimated by the bureau at only \$1,125,000 and their figures show that after paying all operating expenses it would fail by \$311,000 per year to meet the interest at 3 per cent on the investment allocated to power. (At this time certainly 3 per cent

Burns Creek Financially Uneconomical

"... Burns Creek by itself could never pay out. It is, therefore, proposed that it be integrated 'financially, hydraulically, and electrically' with the Palisades project. Surplus revenues from Palisades would be used to subsidize Burns Creek, resulting in a 26-year postponement of the pay-out of the Palisades project. Without being saddled by Burns Creek, Palisades would pay out in thirty-three years. With Burns Creek, the pay-out period would be extended to fifty-nine years, which would appear to be nine years beyond the 50-year pay-out period which, according to many experts, was the pay-out period intended by Congress."

PUBLIC UTILITIES FORTNIGHTLY

does not truly reflect the cost of money to the federal government.)

Obviously, Burns Creek by itself could never pay out. It is, therefore, proposed that it be integrated "financially, hydraulically, and electrically" with the Palisades project.

Surplus revenues from Palisades would be used to subsidize Burns Creek, resulting in a 26-year postponement of the pay-out of the Palisades project. Without being saddled by Burns Creek, Palisades would pay out in thirty-three years. With Burns Creek, the pay-out period would be extended to fifty-nine years, which would appear to be nine years beyond the 50-year pay-out period which, according to many experts, was the pay-out period intended by the Congress.

DURING this extension of the pay-out period, Palisades alone would have contributed a surplus in excess of \$30 million which could otherwise have been used to further the interests of worthy irrigation projects should Congress so direct.

This clearly appears to be a case where surplus power revenues from a multipurpose reclamation project are diverted to subsidize an uneconomical power project. A project which by itself would never pay out.

Such a practice, in this period when economy in government expenditures should be a watchword and when bills sponsoring western reclamation projects are scanned with growing skepticism by many Congressmen outside the area, certainly will not help the passage of those really worth-while reclamation projects that should be constructed.

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Underground Pumping Power Not Needed

PROPOSERS of the Burns Creek project argue that subsidized government power is required to develop the underground water sources in the area by pumping. This contention cannot be supported by facts. Since 1949 the Idaho Power Company in its southern Idaho territory has added 130,000 kilowatts of new irrigation pumping load. This pumping supplies all or part of the water for 400,000 acres of land, and included in this 400,000 acres are 310,000 acres of formerly arid land for which pumped water is the sole supply.

During the same period, 1949-59, Utah Power & Light Company in its Idaho territory has increased its pumping load from 8,700 kilowatts to 42,000 kilowatts, an increase of over 400 per cent, and the acreage has increased from about 83,000 acres to 169,000 acres.

In the past eleven years the acreage put under irrigation with power furnished by private companies is approximately five times that put under irrigation by the Bureau of Reclamation. It is quite apparent that irrigation pumping can be and has been economically served by the private investor-owned tax-paying utilities. The rates of the private companies have fostered this substantial growth in irrigation pumping.

Aiding Improvident Patrons

PROPOSERS of Burns Creek also suggest that the Burns Creek power would go to a group of customers who cannot afford to pay a fair rate for power, as regulated and approved by a state regula-

WHAT'S BEHIND THE BURNS CREEK PROJECT?



Power for
Preference Customers
the Reason

"THE real purpose for constructing Burns Creek becomes apparent when one considers that 98.2 per cent of the total cost of the project is allocated to power. Ninety thousand (90,000) kilowatts of power would be developed and sold in an area where no power shortage exists and where there is no likelihood of any power shortage in the foreseeable future. In fact, at the present time there is considerable surplus of power. Form 12 reports filed with the Federal Power Commission by private electric utilities showed that in the year 1959 there would be a surplus of approximately 400,000 kilowatts in the area served by Burns Creek and that a surplus will continue at about this same level for several years to come."

tory commission. The implication is that if they are to continue to exist, must obtain subsidized government power.

This has no foundation in fact. Sixteen applicants have submitted requests for Burns Creek power.⁵ These are, with one exception, the same customers who now receive power from the government's Palisades and Minidoka projects, and that one exception, Westside Electric Irrigation Co-operative, is actually only a "paper" organization.

Although a specific amount is not listed for the city of Idaho Falls, one of the

above applicants, its present allocation of government power and its present load and load growth exceed that of the other customers, and it is quite logical to assume that it would be the principal recipient of the Burns Creek power.

RECENTLY, the Bureau of Reclamation and the Idaho Power Company entered into an integration agreement which makes available an additional 30,000 kilowatts of firm power to the bureau's Idaho system. This power is allocated to the same preference customers who have applied for power from Burns Creek.

⁵ Letter, Commissioner Dominy, U.S.B.R., to Senator Clinton P. Anderson, May 29, 1959.

PUBLIC UTILITIES FORTNIGHTLY

One of the largest recipients of this power is the city of Idaho Falls with a population of about 35,000. This city has been allocated about 25 per cent of this additional power in the summer and about 40 per cent in the winter and is also the largest recipient of Palisades power, receiving over 50 per cent of the firm output of that plant; and Idaho Falls, which serves no irrigation customers at all, is loudest of all in support of the Burns Creek project.

The allocation of government power to present customers (the same customers who would get Burns Creek power) in the area emphasizes the fact that the principal recipients are municipalities, not irrigation pumpers as Burns Creek supporters have alleged.

Who Gets Government Power?

OVER half of the power produced by the government in the area is allocated to three municipalities, the city of Idaho Falls, the city of Burley, and the city of Rupert. These three cities are allocated 31,000 kilowatts out of a possible 49,840 kilowatts of wintertime power and 25,900 kilowatts out of a total of 51,810 kilowatts in the summertime. And, with the 30,000 kilowatts available from the Idaho Power Company-bureau integration agreement, they will receive 34,510 kilowatts out of a total of 82,000 kilowatts summertime power and 46,300 kilowatts out of 80,000 kilowatts of wintertime power.⁶

It is interesting to note further that of the twenty preference customers now purchasing power from the bureau, fifteen

actually receive less during the summer than during the winter. If a real need exists for additional irrigation pumping power, the allocation to the municipalities could be redistributed in favor of the pumping loads.

FURTHER in 1954, the latest year for which data are available, three years before Palisades power came into the area, farms in the nine Snake river valley counties, where the Burns Creek power applicants are located, actually had 40 per cent of Idaho's farm income with only 26 per cent of the state's farm land. Certainly, this does not indicate a substandard or underdeveloped region in need of economic support from government-subsidized power.

The sixteen applicants for Burns Creek power serve approximately 20,000 customers, of which approximately 60 per cent are located within municipal limits. If Burns Creek is approved, these 20,000 customers will receive power at less than cost, with the U. S. taxpayer footing the difference.

Other Groups Oppose Burns Creek

THE Burns Creek project has been vigorously opposed by the coal mining associations and coal mining labor unions in the area. Data were presented before the congressional committees by these people showing the detrimental effect of the project on the coal mining interests in the area. Coal mining in this area is already depressed.

The 90,000 kilowatts and one-half billion kilowatt-hours annually from Burns Creek would dilute the coal consumption

⁶ Refer to power study, September 15, 1959, attached to Amendatory Contract No. 14-06-100-1081.

WHAT'S BEHIND THE BURNS CREEK PROJECT?

in the area by 250,000 tons per year and would require 20,000 man shifts less of mining labor each year. The people of the Kemmerer, Wyoming, area are particularly concerned because of the effect of Burns Creek on the proposed steam electric development at Kemmerer by the Utah Power & Light Company which would burn sub-bituminous coal in the Kemmerer area.

THE Senate committee recognized this danger and added an amendment to the bill providing that the generating units at Burns Creek not be installed until the preference customers could use the power generated. Such amendment, however, would minimize the dilution for only a period of a very few years and, as brought out by one of the coal people who testified at the Senate hearings, "There is an ample supply of coal to meet any demand in the area for electric generation. If you develop the Burns Creek project it just means that one-half billion kilowatt-hours are going to be produced by the Burns Creek project rather than by mining one-quarter million tons of coal."⁷

PATRICK J. QUEALY, mayor of Kemmerer, Wyoming, summed up the position of the people in the area when he stated:

I should now like to emphasize to you that the people of this area of Wyoming are appearing before this Senate committee without any intention of asking for government assistance or aid, nor do we ask this committee to expend one dollar of the

taxpayer's money on our behalf. We are here simply to request that you do not put a stumbling block in our way, to ask that you allow us to work out our own destiny and to develop our economic future with our own capital and our own initiative.

If the legislation to authorize the Burns Creek project is passed under the guise of being a reclamation project, the American taxpayer will really be paying for a Trojan horse.

The allocation of costs made by the Bureau of Reclamation very forcefully points up the true nature of this project, 98.2 per cent of said costs being allocated to power production, 1.7 per cent to irrigation, and .01 per cent to recreation.

Why Burns Creek Was Pushed

THE real purpose for the construction of Burns Creek becomes apparent when the following remarks of Senator Church are considered. In the Senate debate on July 24, 1959, Senator Church had this to say:

In 1955 the sum of the contract rates for delivery of power to preference customers had grown beyond the bureau's ability to supply the power and the bureau arranged temporarily to secure power from the Idaho Power Company to make up the shortage until Palisades could be completed.

Although Palisades ameliorated this situation, as long ago as April, 1957, the Assistant Secretary of the Interior, Fred G. Aandahl, wrote to me that "It is anticipated that by 1963 all dependable seasonal power other than 14,000

⁷ Hearings before the Subcommittee on Irrigation and Reclamation, 86th Congress, First Session, on S 281, March 16, p. 43.

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kilowatts will be needed by irrigation loads for pumping, thus limiting the seasonal firm power available to the Minidoka project to 14,000 kilowatts." In his letter he further stated, "Obviously the bureau cannot do more until additional federal power plants are constructed in this area. The potential Burns Creek development which has been forwarded by this department to the Congress, would develop needed power."

THE foregoing comments indicate that as far back as 1955 the pressure was on for additional federal power to supply the preference customers taking power from Palisades.

Senator Church, later in the debate, had this to say:

The testimony before the committee (Senate Subcommittee on Irrigation and Reclamation) in my opinion clearly demonstrated that there is presently a *severe power shortage for the preference customers served by the Bureau of Reclamation dams in southern Idaho*, and that this shortage will grow to the point of a serious crisis for all co-operatives if the Burns Creek dam is not constructed.

Reclamation to Pay for Power

THE additional revenues from the facilities installed at Burns Creek are admitted to be \$311,000 short of paying the annual interest only on the investment necessary to construct Burns Creek. This deficiency in interest plus amortization of the principal investment in Burns Creek must be made up from revenues received from Palisades, thus actually decreasing the Palisades revenues available for reclamation purposes in order to underwrite the expense of constructing Burns Creek for the primary benefit (98.2 per cent) of a few preference customers who contend that they have the right to receive a continuing supply of electric power from the federal government once the government has undertaken to serve them.

The multipurpose concept of reclamation contemplates that power revenues will help pay out the reclamation benefits. With Burns Creek, the opposite is true. Revenues which could be used for true reclamation are used to pay for the power features of this project. Hence, it can be fairly said that for the Bureau of Reclamation to call the Burns Creek project a reclamation project is neither accurate nor realistic.

"PRIDE is the source of so much of the world's misunderstandings. True scholarship, academic or otherwise, has always been humble. It knows pride can be the beginning of the arrogance that leads to destruction. [We need a revival of] the imagination on which the great civilizations of the past were based. [One of the distinct characteristics of the present college generation is] indifference to so much that cannot be justified on any ground whatsoever. What we need to do is to come alive."

—JOHN ALLEN KROUT,
Vice president, Columbia University.

Tackling the Washington, D. C., Transit Problems

By HERBERT BRATTER*

(Based on an interview with Frederick Gutheim, staff director, congressional Joint Committee on Washington Metropolitan Problems)

Studies made in the Washington, D. C., area show most clearly that the "auto dominant" transportation system is doomed. Only rapid transit by rail can solve the problems imposed by an exploding population not only in Washington, but most major metropolitan centers. What happens in the nation's capital may well set the pattern for cities all over the country.

In common with other metropolitan areas, that of Washington, D. C., has long been struggling with traffic and transit problems, which with the passing of years promise to strangle the nation's capital unless a workable solution can soon be found. On this the government has been at work and much progress has been made. Within the new decade rapid transit certainly will make its appearance, according to Staff Director Gutheim of the congressional Joint Committee on Washington Metropolitan Problems. The work

of that committee and collaborating bodies, such as the National Capital Planning Commission and the National Capital Regional Planning Council, constitutes a pioneer effort which will have effects not only in Washington, but in other metropolitan areas and therefore deserves our attention.

In one important respect the Washington area is unique. The Constitution charges the federal government with responsibility for the government and welfare of the District of Columbia. One drawback of this situation is the creation of a power vacuum in the capital's center

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which prevents the District of Columbia from itself doing what other cities do in tackling their transport problems. What the federal government does in tackling the metropolitan area's rapidly growing traffic problem not only will reflect the above-mentioned unique U. S.-D. C. relationship, but will foreshadow what the federal government will do if, as is likely, it ultimately faces the urban transportation problem on a nation-wide scale.

THE objectives of the congressional Joint Committee on Washington Metropolitan Problems are to deal successfully with the questions of metropolitan growth and expansion, one of which is transportation. The committee has completed a basic program of studies and public hearings, having submitted its final report and recommendations to the Congress in January, 1959. While dealing with all other subjects, such as water, sewers, economic development, and regional planning, that report deferred comment on transportation. The first legislation proposed by the Joint Committee was SJ Res 42, adopted last year by the Senate and now before the House. SJ Res 42 makes clear the government's interest not only in the District of Columbia, but in the whole "Washington metropolitan region." It expresses the purpose that the management of the District's affairs be co-ordinated with the development of the region's other areas. Finally, the resolution calls for the rapid development of specific plans and proposals to carry out the recommendations of the Joint Committee's final report.

Nation's Capital Pioneers

"WASHINGTON," Mr. Gutheim states, "is the first city to have looked

long and hard at the impact of the federal interstate highway system on a rapidly growing urban region." The interstate system brings us a new form of highway and its freeways as they come into our cities begin to reflect not merely inter-urban traffic but suburban, commuter traffic. The government's studies and projections foreshadow enormous expansion of the Washington metropolitan area's population by 1980, with a corresponding growth in the numbers daily coming into the heart of the capital to work. "If we try to provide highway facilities for those numbers in the years ahead, we face an impossible task. The suburbs and the central area will be ruined and Washington will lose its monumental character," Mr. Gutheim continues. "Greater use of rail transportation is simply unavoidable.

"While Washington's public buildings, shrines, monuments, and parks constitute a center of unique beauty, similar considerations are present in many other cities facing transportation difficulties. Charleston, South Carolina, is just as proud of its architectural heritage. San Francisco is just as proud of its scenic setting."

What Future Holds for Washington Area

THE Washington, D. C., metropolitan area has been gradually exploding. A series of maps shows how, over the years, the urban characteristics have spread into nearby suburbs and country, following at first railroad and streetcar lines and later, with the development of the passenger car and automotive buses, the highways. Whereas on the District of Columbia's Maryland borders the area's growth has been rather solid, that across the river in

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nearby Virginia counties has been characteristically scattered, rendering extremely difficult the provision of such services as water, sewage disposal, utilities, and the like in plans for the future.

With the future development of circumferential highways now under construction, where these are intersected by roads radiating from the center, new nodules of urbanization will take root. Residences, shopping centers, light industries, and decentralized federal government agencies will continue the process that has been going on since World War II. All this will stimulate growth in crisscrossing traffic which will bedevil the transit planner.

Three Transit Systems Analyzed

THE Mass Transportation Survey Report—1959, Transportation Plan—National Capital Region, in an attempt to determine the ability of various new facilities to meet future traffic demands, evaluated three hypothetical transportation systems. Each such system consisted of a distinctive form of public transit service plus the highway network needed to carry both the people who would not use transit and the truck traffic. The three

are the "auto dominant," the "express bus," and the "rail transit" systems. A balanced system is the one most likely to be adopted.

The utter impossibility of relying on the "auto dominant" system for the traffic load of 1980 is revealed in the testimony and exhibits presented during the Joint Committee's 1958 hearings by Kenneth M. Hoover, project director of the Mass Transportation Survey. To satisfy projected traffic by highways alone would call for multiple-lane highways impossible to envisage: 10 to 16 lanes in some parts of the area and as many as 26 lanes coming in from the North.

WHAT excessive urban travel by auto can do to a city is to be seen in Los Angeles, terminus of the Hollywood freeway. The map of the downtown area printed in the Joint Committee's hearings shows it to have been largely converted into parking lots and garages. The testimony of Professor William Vickery last November reveals how extremely expensive it is to provide for highway service on the scale demanded by the traffic levels projected for 1980. He said: "... for each car that makes a daily round trip

No Final Answer Seen in D. C.

"FOR the D. C. area no final answer has yet been given on how to move the peak load automobile passengers into a more efficient form of transportation. The Joint Committee now has under way the drafting of a law to create a Federal Transportation Corporation for the D. C. region. After further engineering studies, the acquisition of rights of way, etc., the projected corporation will be able to create a rapid transit system. According to Mr. Gutheim, within eight years the District of Columbia should see in being a successful, attractive, economic, and realistic alternative to the private auto for getting to work. During just the next two or three years, however, we shall see only further studies. Physical progress will take longer."

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during the rush hours, an investment of \$23,000 must be made to provide the needed roadways and parking space."

The witness asked how many people who drive to work during the rush hours would be willing to continue to do so if the car they had to use cost them \$25,000 instead of \$2,000; or how often the average driver would be willing to pay \$4 or so per round trip for this privilege, so as to amortize this \$23,000 investment—all this over and above the cost of maintaining and operating the car itself. If the average driver would not be willing, but would in such case choose a mass transit facility, is it proper, Professor Vickery inquires, to spend the money in this way for him, make no charge or an inadequate charge for the use of the facility, and add to his tax burden as he and others swarm over the "free" facility?

CITING these figures Mr. Gutheim observes that in our present course we are bankrupting ourselves and destroying our cities in the process. The impossibility of relying on the "auto dominant" system is self-evident. To take care of the anticipated growth of population in the D. C. metropolitan area by 1980 of between 1 million and 2 million, the minimum provision for transportation will cost \$2.5 million. The masses seeking entry into and exit from the center of Washington at rush hours certainly cannot be handled by auto. Rapid transit by rail must be provided. Along with this will come widespread elimination of downtown parking.

This is not just a problem of Washington, D. C. President Eisenhower has instructed his special assistant on public

works, Major General John S. Bragdon, to make a special study of the urban parts of the federal interstate highway system and its impact on cities. A House subcommittee, under Congressman John A. Blatnik of Minnesota, also is studying the problem.

No Answer to Problems Yet

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Some way is being sought to create a balance between use of highways and use of transit facilities. Professor Vickery suggests an automatic toll assessment system, with tolls varying according to the hour of the day. His plan is outlined in considerable detail in the Joint Committee's hearings.

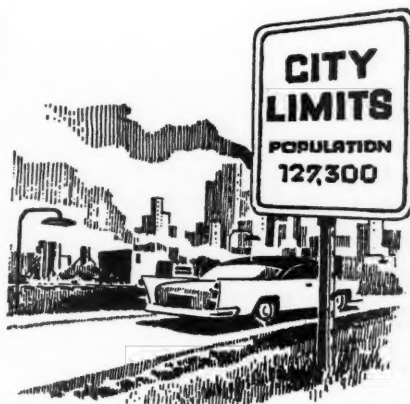
Some Transit Possibilities

MR. GUTHEIM predicts that within eight years there will be a subway

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Typical Example of Excessive Automobiles

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in the central area of Washington; to be followed later by rapid transit connections with suburbs. He also looks for greatly improved service on existing railroads and rights of way. Monorail has been suggested for rapid transit purposes in the District of Columbia, but it seems more likely that any expansion of rail service will be of the conventional type. "The one novel form of transportation that has very intriguing possibilities is the Goodyear 'carveyor,'" the staff director noted.

How will the rapid transit system of the District of Columbia be financed? "The initial system will be financed by the federal government, which will continue to own the rights of way, tubes, and possibly track," Mr. Gutheim answered. "Hopefully, it will be attractive for private companies to provide the rolling

stock, labor, and other services. You must subsidize urban transportation. The subsidy involved in the predicted type of rapid transit is akin to that already being provided to bus lines and, moreover, is a manageable type of subsidy administration."

The Joint Committee will further study the bill to create a Federal Transportation Corporation now being circulated among interested agencies and parties for comment and suggestions. Emerging from this bill will be a transportation agency for the District of Columbia region with research and development powers, rather than a corporation immediately empowered to build a rapid transit system. The 1960-61 budget provides \$2 million for further planning and engineering studies. Today, according to Mr. Gutheim, Washington is as close to action

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on a rail rapid transit system to meet the needs of the years ahead—not to mention present needs—as is any other American city.

Merit in Following Washington's Lead

MORE cities should emulate what has been done in the case of the Washington metropolitan region and study the impact of expressways on urban economies. The Washington study represents a longer and harder look than has been devoted to this subject anywhere else. This study has come to grips with federal policies that govern the \$40 million network of interstate highways, a different type of highway system that is geared to national defense. Just as it is now aiding the states, the federal government may decide to help cities improve mass transit.

Changes in the interstate highway system will mark the first step in a revised approach to transportation of people. A new federal program for mass transportation within metropolitan areas would be a logical sequel.

Travel by Persons within D. C. Metropolitan Area

ACCORDING to the Mass Transportation Survey, analysis of travel by purpose of trip throws light on a region's transportation problem, since each kind of trip has its distinctive relationship to such factors as income level and automobile ownership, and each makes a unique demand on the transportation system. A study of the Washington area in 1955 showed the following, in thousands of trips:

Purpose of Trip	Mode of Travel			Total
	Auto Driver	Auto Passenger	Transit Passenger	
Work	470	212	349	1,031
Commercial .	310	152	98	560
Social	144	210	157	511
Other	124	272	28	424
Total	1,049	847	631	2,526

Only one-fourth of the District of Columbia's urban travel was by transit facilities. During the four peak hours constituting the morning and afternoon rush hours, 40 per cent of all auto trips and half of all transit trips occurred.

The Effect of Centralization

"AS major government powers are drawn to a central source, the vitality, spirit, and character of the people are altered. Their self-reliance is weakened. The lazy become parasites on the workers. They lose interest in acquiring the knowledge they need to hold government accountable. They give up the hope of influencing government. Already, less than half of our potential voters trouble to go to the polls.

"When the public is in this weakened state, pressure groups, representing only minority interests, wield considerable power because they are tightly organized and the public is not."

—BARRY GOLDWATER,
U. S. Senator from Arizona.

A Little "Show Shop" Helps Off-job Safety

By JOHN MAPPELBECK*

More people get hurt away from work, Bell management finds, than on the job, and it costs the company money. Hence, a new safety teaching technique is in order. One Bell manager finds the Hollywood touch helpful.



REALLY, to understand this television quiz show scandal, you have to live a little while in Hollywood. Perhaps it is better to call it *that* scandal. For tomorrow there will be bigger and better ones to affront the public. Our economy is flexible. There is always dirty work going on at some crossroads, and careers to be built on it.

Living in Hollywood, you learn that the show must always go on. More—there has to be a show. Investigators, newspaper people, even television management itself, do not seem to understand that. It has not come out in the investigations.

But it is very simple.

Imagine yourself a TV packager, looking for a new idea. What will interest the viewing audience, and sell to a sponsor? Among other possibilities you consider fairy tales, folkways, characters people

have loved for centuries, Cinderella, Robin Hood . . .

Ha! The spelling bee. Born in the little red schoolhouse, it has now become national, with regional teams competing, and prizes like trips to Washington. How about a spelling-bee-type contest with questions from history, literature, sports, with money prizes in keeping with television appropriations?

Businessmen were dismayed when they first heard what television was going to cost.

"We just do not have that kind of money," protested a telephone network executive. But television was a wholly new kind of advertising. You could show your goods on the screen and beat down sales resistance as never before. Presently there was plenty of money. Some critics maintain that this is what is the matter with television—too much money. However, none of these critics appear ever to have sold goods.

*Author of business articles, resident in Washington, D. C.

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THE spelling bee transformed into a quiz show, with whopping prizes, was new and exciting to the television audience. When it was given showmanship. When it was built up for suspense.

You select tough questions, that your viewers are also going to try and answer, and be tickled if they succeed. You have a bank officer bring them in sealed envelopes, to guarantee integrity. This is "show shop." There are no ethics, no laws, to hamper you in dressing up your show.

Suspense is added by picking your contestants. An audience is always on the side of the little guy. You find a shoemaker who can answer any question about grand opera. "Imagine—just a cobbler!" reflects the viewer. "Why, I never knew that myself." An audience will be for the country boy *versus* the city slicker. So you find a freckled farm boy who can answer questions about world cities better than any city dweller. You find a teen-age mathematical wizard. You pit a movie star and a jockey against each other on art and artists.

More suspense is created by teaching your contestants to hesitate over their answers, even when they know them well—or have been given them in advance. They are told when to ask that a question be set aside for the moment, to come back to it later. They agonize, and falter, submit an answer, asking if it is right. You shut them up in a booth where they sweat—the more suspense, the more the show sells product. If your rating falls off, you add more suspense.

And this has been show shop since the days of P. T. Barnum, and until television quiz shows came, it was never called rigging.

Which Has to Do with Off-job Accidents

IN Hollywood they laugh to see rigged quiz shows running right along on television, without scandal. Like the ones built on the old idea of Twenty Questions, in which a panel of cross-examiners tries to discover the identity or occupation of a stranger—say a motherly woman who has gold mines in New Guinea. The panel is rigged with cross-examiners who laugh at each other's wrong guesses. One such show has a Dumb Dora who muddles, and dillydallies, and makes silly guesses—and is probably a bright girl, with a high IQ, picked for the act.

Now, suddenly, telephone management is waking up to the cost of off-job accidents in absenteeism, employee turnover, loss of money spent for training workers who are disabled or killed. Off-job safety training is being developed to reduce such accidents, if possible. And one telephone organization has discovered that showmanship is needed in this field. You have to build a show. It has to be a rigged show.

More than fifty years ago, on-job accidents began to be reduced by safety training, with results that need not be enumerated. But almost until today, off-job accidents have been disregarded in business. An employee broke a leg skiing, or by falling off a stepladder at home. That was regarded as his own misfortune; no compensation was involved, no pocketbook nerve twinged.

BUT several years ago Bell system management began to appraise off-job accidents in terms of business losses, and several Bell companies were asked to keep track of them, with startling results.

A LITTLE "SHOW SHOP" HELPS OFF-JOB SAFETY

It already had been learned by the National Safety Council that in the working population more than 2.5 million off-job accidents were reported yearly. This is three times the on-job accidents. They cost 55 million working days, nearly twice the number lost through strikes, and caused more than 32,000 deaths.

Bell figures were worse, from five and up for each on-job accident, with an average of fourteen days' lost time, and 137 fatalities in 1958.

A start on the off-job safety problem was made by developing a form and instruction book for all Bell companies, "Recording and Measuring Off-duty Injury Experience." Off-job accidents were reported in three categories: automobiles in other than company cars; on the streets and elsewhere not involving cars (public); and in the home. Home accidents were found to be 60 per cent of the total. These reports allow a comparison with on-job accidents. Off-job accidents are summarized every three months.

THE Bell system has greatly reduced auto accidents in company cars by teaching defensive driving, a technique developed by the National Safety Coun-

cil that, briefly, stresses three "C's." There are other people on the road, Courtesy toward them decreases accidents. Some of them are unskilled, careless, dangerous; keeping safe distances, allowing for their mistakes, and paying strict attention to your own driving, Concentration and Control, reduce accidents.

Bell employees have been sent to school, on company time, to learn this technique, with such good results that now off-job auto accidents are highest in injuries and time lost. It was reasoned that defensive driving lessons for employees' families, and themselves, in their own cars, would be a logical point of attack on this problem.

But where could these people go to school?

It was here that one Bell executive saw that a show was needed. A rigged show. A show with Hollywood show shop. It was built with a Hollywood touch.

How to Build an Off-job Safety Show

SEVERAL years ago, due to postwar expansion, Pacific Telephone & Telegraph Company's southern California setup was split by forming a southern

Boating Hazards and Safe Practices Dramatized

"AS an example of employee interest in safety, one telephone supervisor, noting the rise in boating accidents, organized a water safety show for 'week-end skippers.' An elaborate project, in which he recruited the Navy, Coast Guard, Red Cross, and public officials. Manufacturers set up exhibits of boating equipment. The show opened with a parade of different types of boats. There were demonstrations of the dangers of boats too highly powered; the swamping of a small family boat by a cabin cruiser; dealing with a boat fire; water skiing and skin diving; and finally a Navy rescue of a person in the water by helicopter."

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counties division, separate from the Los Angeles area. This new division, six counties, known for short as "SoCo," is managed from San Diego by Walter W. Straley.

For a long time Walt Straley was a Bell man in San Francisco, and then transferred to New York for several years, and finally put in charge of SoCo.

Really, you have to live a while in California to understand the feeling between north and south. It is a curious schizophrenia. San Francisco considers itself urban, cosmopolitan, sophisticated, historic. Los Angeles is regarded as a group of boom towns in search of a city. Industrial growth in the southern area draws San Franciscans there, as the magnet draws steel filings, and many of them abhor it, feel that it is lowering.

Walt Straley did not feel that way. He liked his southernmost southern California, and especially liked being near Hollywood. Not for glamor, but for its showmanship, some of which rubbed off on him. So when this off-job safety problem came up, he saw that it needed a show, and the kind of show his SoCo people put together may be needed elsewhere.

FIRST, the idea of teaching defensive driving to employees' families was considered and a test made. It was found impracticable for such reasons as where the pupils were to go to school. But chiefly it lacked entertainment allure.

Safety teaching of all kinds is rather forbidding, with its eternal reiteration of "The life you save may be your own," and its forecasts and scores of holiday accidents. In Hollywood lingo, it lacks box office. You have to make a production.

Next, the SoCo brass went "brainstorming" for ideas, not in a meeting, but a general scurrying around for suggestions, good, bad, wild, impossible. Anybody who would talk was welcome. His suggestion off the top of his mind went in the pot, and out of this scramble the show was put together. Definitely, brainstorming worked in this case.

Your Own Front Seat at the Show

ATTENDING this show, to see what it might do toward off-job safety teaching, you would find yourself in a ball park or high school bowl, around 7 P.M. Admission free, and you are yanked into the spirit of the thing immediately.

"Buzzy" the clown greets you at the gate. If there are little kids, he hands them helium-filled balloons with the "Three C's" on them. For older kids school pencils lettered "Drive Safely, Play Safe, Live!" For yourself, hot coffee or cold soft drinks. What show people call the "hook" is there from the start, concealed in the bait.

At 7.55 "Buzzy" goes up on the stage and performs pantomime tricks to quiet the crowd, and at 8 an alarm clock goes off in his lunch box. He introduces a master of ceremonies, there is a grand parade of the actors, circus style, and Straley briefly explains the purpose of the show.

This show was put on entirely by telephone people, except for a motorcycle team from the Escondido police force, which put on a safe driving demonstration.

A 15-minute skit in which bad driving was staged with motorized gocarts was

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the hit of the show, with a crazy character named "Phinias Fender Bender," who became a favorite with the audience, as he escaped by the skin of his teeth, time after time, until he finally crashed and was carried off on a stretcher.

Another skit dramatized safety in the home, with a "Do It Yourself Accident Kit," emphasizing the serious by the ridiculous.

PEOPLE like to score themselves for their knowledge, character, behavior, status—whatever. So this show had a self-scoring safety quiz, the following questions being read, and the audience deciding "Yes" or "No," to themselves:

I am the only one who is with me all the time.

Therefore I am the one person best able to look out for my own safety.

1. *Attitude.* Do you still brag about the times you broke a traffic law and did not get caught?

2. *Concentration.* How often do you feel that people are admiring you as you drive down the street?

3. *Control.* When you take chances in traffic do you do it just for the fun of it?

4. *Courtesy.* Do you give the other driver an even break if he insists on it?

5. *Desire to Avoid Accidents.* When you refuse to share the road is it because you feel that you have the right of way?

6. *Impatience.* When traffic situations go wrong and you get sore, do you talk to yourself?

Off-job Safety Records Begun

"A START on the off-job safety problem was made by developing a form and instruction book for all Bell companies, 'Recording and Measuring Off-duty Injury Experience.' Off-job accidents were reported in three categories: automobiles in other than company cars; on the streets and elsewhere not involving cars (public); and in the home. Home accidents were found to be 60 per cent of the total. These reports allow a comparison with on-job accidents.

Off-job accidents are summarized every three months."



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7. *Consistency.* Do you drive more safely when you see a policeman?

This show was given six times, in rented parks, in the six county centers, during three weeks, with a total attendance of 22,000. Bell has about 13,000 employees in the area. Their defensive driving of company cars is a recognized safety factor in the community. Costumes, stage properties, lighting and sound effects were rented from concerns in those lines. Their experience and recommendations contributed to the success of the show. Music was provided by a "combo" of electric organ, guitar, and drums. The performance lasted an hour and a half.

The Long-range Objective

ONE local newspaper praised the show as "benevolent," the implication being an instance of Big Business having a heart.

Mr. Straley feels that if just one person is alive at the end of this year as a result of seeing the show, its objective will have been achieved. Last year there were five Bell employee fatalities in SoCo territory.

That such shows are going to have immediate effect in reducing off-job accidents is not likely. But over the years, by job safety training, like defensive driving, and first aid, the Bell system has created a spirit that not only reduces work accidents, but is recognized by the general public. Instances of first aid rendered by Bell employees are constantly being reported. Bell defensive driving classes have stimulated interest in communities where outside classes have been

started by police forces, safety officials, and community leaders. Bell companies have helped such classes get started by training teachers.

Off-job safety is a long-range project. By creating a spirit among employees, it is believed that such accidents will eventually be reduced, and the gap between on-job and off-job safety be bridged.

As an example of what can be done in this way, an essay contest was held for SoCo employees and their families several weeks before the show was staged. In each county prizes were offered for three age groups:

Seven to twelve—Draw a picture of a highway hazard and write a slogan for it.

Thirteen to seventeen—Name the best driver you know, and tell why you think him best.

Eighteen and up—Write a 200-word essay about a highway traffic problem, and propose your solution for it.

The older contestants included young employees. Bicycles, radios, and cameras were the prizes, and the winning essay in the oldest group, by Sonya O'Rear, in the San Diego chief engineer's department, was read at the show. This was its tenor:

Man is God's most intelligent animal—and today's biggest safety problem.

His bad thinking and acting on the road are amazing.

He is acutely aware, not of his own faults, but the faults of others, the hot rodder, the slow poke, the lane

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dodger. Often he is so occupied by their faults that he does not know what lane he is in himself.

We look to others for safety solutions—better cars, improved highways, more traffic controls.

How about applying some of our own solutions?

When you drive, concentrate on driving, daydream off the road.

Be courteous. Have patience. Think a good thought for the other fellow. By being selfish and careless, we insult our own intelligence.

THESE essays were judged by outsiders, teachers, and traffic officials. The essay prizes were exhibited before the show, along with prizes for employee members of a newly formed "SoCo Safe Drivers Club," which were tires, gasoline tickets, and safety belts. A car sticker was issued, too, with an alert jackass, and the legend "SoCo Safe Driver," also put on company cars.

Tickets for the shows were given employees, each with its road map on the reverse, and employees' friends were invited. The usual newspaper releases got a good local press.

Not a Very Safe World

IT is fitting that the telephone industry should lead off in such safety education for several reasons. It is highly manned. Postwar expansion and new equipment have created a tremendous demand for supervisory and executive ability, and for special skills and flexibility in taking on new jobs. So it has been necessary to establish educational courses for Bell people. Add that temperament is in demand as well as skill. Bell people have come to be regarded, by the public, as careful, pleasant men and women.

Hence, absenteeism, employee turnover, and injuries to key employees are cost factors in the telephone business—the little foxes that gnaw the vines.

Can a similar good name for off-job safety be added to this public opinion? Can telephone carefulness be extended to families, neighbors, the general public?

A comparison with the development of on-job safety may help focus the picture.

This has never been a very safe world. Men had to watch their step even when their tools were sticks and stones, and at the turn of this century work began

Effective Drama and Demonstration

THIS show was put on entirely by telephone people, except for a motorcycle team from the Escondido police force, which put on a safe driving demonstration. A 15-minute skit in which bad driving was staged with motorized gocarts was the hit of the show, with a crazy character named 'Phinias Fender Bender,' who became a favorite with the audience, as he escaped by the skin of his teeth, time after time, until he finally crashed and was carried off on a stretcher. Another skit dramatized safety in the home, with a 'Do It Yourself Accident Kit,' emphasizing the serious by the ridiculous."

PUBLIC UTILITIES FORTNIGHTLY

to take on modern industrial hazards. The motorcar took over business hauling. The carpenter, who had sawed a board by muscle, got power tools. New processes and products involved dangerous equipment, and materials. It was not yet possible for a Washington bureau to spoil 50 million Thanksgiving dinners by condemning the cranberry sauce, but it gives an idea of what was coming.

SAFETY training was started for people on the job. Engineers studied hazards, made machinery safer, taught workers, reduced work accidents, and besides inculcated a safety spirit, which will be even more necessary in off-job accident prevention. This movement also had the advantage of captive pupils; their school was on their jobs.

At that time, as a young man, a utility employee lost the sight of one eye through a minor shop explosion. There was no compensation then, and he considered himself lucky when the company took him back, instead of having to sue for damages.

"They didn't even buy me a new pair of specs," he recalls. "Mine were broken. I think safety glasses were unknown."

Several years ago, this man lost his other eye in a street accident, on his own time, being struck by an oil truck. He received compensation, the oil company was sued for damages, and, being near sixty-five, he was retired on pension. Still active, he mastered Braille, a hard thing for an elderly blinded person, and learned to get around with a white cane.

"Hey!" said a policeman to him, one day, "you could be fined for carrying that cane; those things are for blind people."

"But I am blind."

"Come off! I saw you looking in that store window."

"I went in the doorway to locate myself by echo—when you're blind you have to learn such things."

This blinded utility man has an interest of definite significance to business concerns studying the problems of off-job safety training. He teaches elderly blinded persons to get around among people, instead of retiring from life. The hardest part, he finds, is convincing their relatives that they can do it safely, and enjoy life more.

Safety Work by Phone People

OFF-JOB safety education's pupils are widely scattered, out on the highways in their own cars, in their homes, on vacation, playing games, not easily led to go to school. Yet their homes, and their play, are becoming more hazardous. They all have cars, and power tools, and appliances, multiplying the hazards that arose when job safety training became necessary. Good housekeeping is important in job safety. Bad housekeeping is one of the greatest home hazards.

Off-the-job hazards have been increased by such innovations as swimming pools and boats, and pleasures made possible by better wages and more leisure. Play is a big hazard, generally overlooked.

In connection with a cable laying, a telephone engineer went out on a fishing vessel, where the fishermen spent several cold, wet hours emptying nets. Far from being tired, when they headed back to shore, they began banging one an-

A LITTLE "SHOW SHOP" HELPS OFF-JOB SAFETY



Essay Contest

Sparks

Off-job Safety

"**A**S an example of what can be done in this way [to reduce accidents], an essay contest was held for SoCo employees and their families several weeks before the show was to be staged. In each county prizes were offered for three age groups: Seven to twelve—Draw a picture of a highway hazard and write a slogan for it. Thirteen to seventeen—Name the best driver you know, and tell why you think him best. Eighteen and up—Write a 200-word essay about a highway traffic problem, and propose your solution for it. The older contestants included young employees. Bicycles, radios, and cameras were the prizes, and the winning essay in the oldest group, by Sonya O'Rear, in the San Diego chief engineer's department, was read at the show."

other with squids, that had been set aside, the husky playboys who got spattered with the most sepia, losing the game. Good, clean fun, in which the loss of an eye would be just too bad. That experience gave him a new slant on safety.

Telephone management is discovering some unsuspectedly nice angles in off-job safety teaching—that many employees are engaged in it because they like it, want to extend its protection to others. This may be a start in settling the problem of where outsiders are to go to school.

SIXTY years ago, not every family had a bathtub. Today that family is likely

to have a boat. As people get boats, all sorts, sail, skiffs, outboards, cabin cruisers, they go out on a kind of highway entirely new to most of them, with tides, winds, traffic jams, and reckless hot rod-ders. The accidents become something to think about. Each coast has its particular types of boat, developed through experience, very likely to be hazardous on other coasts.

As an example of employee interest in safety, one telephone supervisor, noting the rise in boating accidents, organized a water safety show for "week-end skippers." An elaborate project, in which he recruited the Navy, Coast Guard, Red Cross, and public officials. Manufacturers

PUBLIC UTILITIES FORTNIGHTLY

set up exhibits of boating equipment. The show opened with a parade of different types of boats. There were demonstrations of the dangers of boats too highly powered; the swamping of a small family boat by a cabin cruiser; dealing with a boat fire; water skiing and skin diving; and finally a Navy rescue of a person in the water by helicopter.

When telephone management can find a fellow like that, in the customer sales department, it suggests a search for other employees doing similar off-job safety work because they like it. Boating safety is also the interest of another telephone man who, in the boating season, puts his own craft on the river for rescue and first aid.

TEACHING first aid to policemen is the outside interest of one telephone plant man, who in twelve years has taught several hundred local recruits, and outside officers who have come to his classes. He often accompanies his pupils to accidents, assisting badly hurt people, and once delivered a baby in a squadcar.

All around, telephone people interested in first aid have formed themselves into

first-aid outfits, going to football games and other gatherings where their services may be needed.

A telephone repair man took it upon himself, a dozen years ago, to build a mobile first-aid unit, which he takes on call to accident scenes, and to fairs, sports events, and other places where it may be needed. He has rendered first aid to more than 300 persons, and received national and regional awards for his work.

Chief operators in another telephone company hit upon the idea of "Safety Oscarettes," little doll-like figures of telephone girls, modeled on Hollywood "Oscars," which were awarded to exchanges and switchboards making the best safety records. There was keen interest as they moved around each month, and pride in having one. This interest extended to outside concerns, would be nicely adapted to schools, neighborhoods, other "civilian" groups striving for off-job safety.

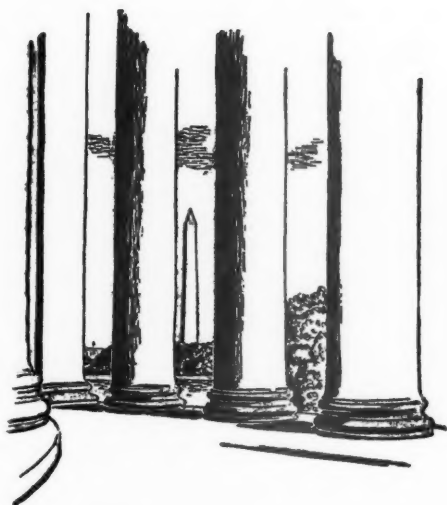
The telephone business is honeycombed with employees like this.

They undoubtedly make bridges between on-job and off-job safety teaching.

I SINCERELY believe you will find public relations taking on new and increased importance in the telephone business during the sixties. The techniques of public relations will be changing and it will be imperative that the telephone company manager keep up with them. Through strong public relations, the telephone company will find prosperity as we have never seen it before. Poor public relations—or merely passive, inactive public relations on the part of even the smallest telephone company—will mean disaster. The public will not put up with a telephone company that does not explain its policies and actions and that does not make its public a part of its day-to-day operation."

—R. L. POST,

Public relations director, Southwestern
States Telephone Company.



Washington and the Utilities

Gas Bill Revival—More Talk Than Action

LITTLE hope was entertained in informed Washington circles that tangible results would flow from the recent statement by President Eisenhower on the possibility of reviving natural gas producer legislation in this session of Congress. The President's statement did have the effect of putting Democratic Congressmen from gas-producing states on the spot—as witnessed by their efforts to throw the ball back to him. But the southern and southwestern Democrats do not want to start any internal party fires over the controversial bill to exempt gas producers from full FPC control on the eve of a presidential election campaign.

As a matter of fact, it is pretty clear that neither the administration nor the Democratic opposition expect any real action. The conversation about it is mainly political maneuvering. Representative Harris (Democrat, Arkansas), chairman of the House Interstate Commerce Committee, who has often sponsored similar gas measures, agreed that nothing would be done. And the Republican members are willing to agree privately.

Speaker Rayburn of Texas, asked about the President's statement, had this comment:

We passed a pretty good gas bill in 1956, and the President vetoed it. What kind of a bill he would sign I do not know. I would certainly want to see what he proposes before I have any comment. There is no use in going up the hill and having to roll down again.

Eisenhower vetoed the earlier bill not because he opposed it but because there were reports that its supporters had made improper offers of campaign contributions to Senators in return for their votes. Rayburn commented on this point that "you could get any bill vetoed that way." He said you can always find somebody interested in a pending bill who has offered to contribute to somebody's election campaign. Rayburn's statement left the matter right where it has been for some time: up in the air.

Both President Eisenhower and top congressional leaders think gas controls should be relaxed. But in this election year neither side seems likely to take the initiative to relax them.

EISENHOWER took his renewed stand for "elimination of public utility-type regulation" of gas producers in a letter to Representative Belcher (Republican, Oklahoma). Belcher had asked the President to send Congress a special message asking for the gas legislation.

Dear Page:

Your recent letter expressed the hope that I would send a message to Congress during this session advocating once again the passage of a gas bill. I feel sure that everyone clearly understands my position on this matter. I have strongly favored the elimination of public utility-type regulation of producers of natural gas. Both before and since the veto of the gas bill in 1956 I have advocated legislation to this end. I still favor such legislation.

In existing circumstances, however, a mere reiteration of my viewpoint on this matter would probably serve no useful purpose. I am ready and willing to support this legislation in this session with full vigor if those in control of Congress give some indication that they will join in this effort.

With warm regards.

Sincerely

Dwight D. Eisenhower

Rayburn's comment reflected a general feeling among Democratic leaders that the next move in this matter must be taken by the President. Representative Harris said his own position had not changed.

This position, as stated last year, was that nothing further would be done "unless conditions change." One of the conditions he mentioned was that the President would have to request action by Congress. "We still don't have any message on the subject," Harris pointed out last month.

FPC Irregularities Denied

DESPITE charges by administration critics that Chairman Kuykendall of the FPC, and possibly other commissioners, had listened to "improper contacts" in disposing of a pending matter, no evidence of undue influence was turned up at the recent controversial hearings of the House Subcommittee on Legislative Oversight, headed by Representative Harris. Kuykendall defended the action of himself and fellow commissioners as proper under the circumstances, notwithstanding an ostensible "ex parte" contact between himself and Thomas G. Corcoran, former New Deal brain trustee who represented a gas pipeline company having business before the commission.

The charge revolved around a rate and certificate case which had to be decided in a hurry because of a contract deadline, after which an important source of gas supply might be lost if the FPC failed to act before it expired.

Other members of the FPC were also said to have been approached off the record. Kuykendall, although not identifying Corcoran at the hearing, said later that he had informed House investigators of the ex parte, or one-sided, approach last October. It was Representative Dingell (Democrat, Michigan) who named Corcoran.

The former New Deal adviser had urged, in two contacts, that the company (Midwestern Gas Transmission Company) needed a 7 per cent return on its investment in the proposed pipeline to carry gas from Canada into the Midwest. A commission staff paper had recommended 6½ per cent. An FPC decision last October 31st left the rate open pending construction of the line. It said the company should file its proposed rate of return sixty days before it began to

WASHINGTON AND THE UTILITIES

operate the line. Dingell told Kuykendall his actions had raised "grave questions of your propriety."

KUYKENDALL did not identify the parent concern, Tennessee Gas Transmission Company, one of the world's largest natural gas firms. Regarding the last-minute change, Kuykendall said the original draft of the opinion never had been approved by the full commission and that final agreement was not reached until almost the deadline last October 31st.

Kuykendall said the firm's spokesman protested to him over the phone that Midwestern Gas needed a 7 per cent rate of return—as it already had stated—if it were to operate profitably. The commission's staff, the chairman said, had recommended a lower one. The FPC wound up fixing what it called an open-end return—with the exact percentage to be set later. In other words, the commission did not do what the company wanted, nor what the staff wanted. It used its own judgment. The staff report was required to complete the record before the commission acted.

The House group had called Kuykendall to express his views on legislation to establish a code of ethics designed to prevent backdoor influencing of government regulatory agencies. He said he was in full accord with the objective but that the proposal lacked a clear definition of morality, "possibly inevitably so, for good morals come from individual integrity which is not only hard to define but also difficult to inculcate by statute." The Harris group plans further hearings on so-called "secret contacts" during which Corcoran is likely to be called as well as Kuykendall.

Securities and Exchange Commission records indicated that, contrary to testimony on Capitol Hill, the Tennessee Gas

Transmission Company was contemplating further investment in its subsidiary, Midwestern Gas Transmission.

According to Kuykendall, Corcoran wanted to emphasize that Midwestern could not rely on Tennessee to subsidize its proposed \$52 million pipeline.

Snake River Dam Hearing Delayed

THE FPC hearings scheduled to start on March 21st on the High Mountain Sheep hydroelectric project were postponed until April 4th. The postponement was attributed to "the filing of a conflicting application yesterday [March 15th] by Washington Public Power Supply System of Kennewick seeking a license for the proposed Nez Perce hydroelectric project in the same stretch of the Snake river."

Thirteen Washington state PUD's are affiliated with the Washington Public Power Supply System, which also has filed a motion requesting that its application be consolidated for hearing with the license application of Pacific Northwest Power Company for the High Mountain Sheep project. A spokesman for the FPC said the hearing was postponed "in order that full consideration may be given to the motion for consolidation and procedure to be followed." He said the postponement was until April 4th "or until such other date as may be hereafter fixed."

The PUD's proposed project calls for a 700-foot-high arch-type dam on the Snake river two and a half miles downstream from the confluence of the Salmon river. Estimated cost is \$276 million. Initial installed capacity was estimated at 1.2 million kilowatts with an ultimate capacity of 2.4 million kilowatts.

PUBLIC UTILITIES FORTNIGHTLY

The application says the project's power output would be used to serve member PUD's of Washington Public Power Supply System and other utility organizations and industries in the Pacific Northwest. The Mountain Sheep proposal of private power companies of the Pacific Northwest provides for a 690-foot-high dam across the Snake about half a mile upstream from the Salmon river. Estimated cost is \$178 million. Initial installed capacity would be 875,000 kilowatts and the ultimate capacity would be 1,750,000 kilowatts, the FPC said.

Senate Fuels Study Opposed

THE Department of Interior is opposed to Senate Resolution 73 which calls for a national fuels policy study, even though it has been ostensibly moderated through revision. Elmer F. Bennett, Interior's Under Secretary, told a meeting of the National Petroleum Council in Washington, D. C., last month, that the national fuel supply situation was not menaced by scarcity and insecurity, but was in danger of overregulation.

The oil and gas pipeline companies are continuing their fight against the measure on the grounds it is not needed. An effort was made to get natural gas producers interested in the possibility that the program might be made to fit in, partially, with their efforts to get free from Federal Power Commission price controls at the wellhead. But the revision and modification of the resolution have apparently not ended opposition.

The revised Senate Resolution 73 eliminates some provisions (mainly with respect to so-called inferior uses and conservation of gas) which had been objectionable to the gas and oil industries. As

it stands now, most segments of the gas and oil industry and some representatives of the oil business are still against the fuels study idea endorsed by the coal interests. Some gas and oil people are willing to wait and see what happens. The outlook for eventual passage of some kind of a study resolution by the Senate is still considered fair, despite Interior Department opposition.

House Passes Mineral Leasing Bill

THE House of Representatives has passed and sent to the Senate the oil and gas mineral leasing bill. This legislation (HR 10455) was introduced by Representative Morris (Democrat, New Mexico).

The bill provides the following: (1) No person, association, or corporation may hold more than 246,080 acres under oil or gas leases or options in any state except Alaska. (2) No options to acquire interests in oil and gas leases shall exceed 200,000 acres in the aggregate in any state, except Alaska. (3) Lands leased within known oil- or gas-producing fields are to be leased in units of not more than 640 acres by competitive bidding. (4) Lands not within such known areas may be leased to the first person making application. (5) Rental shall be 50 cents per acre for each year of the leases. (6) Primary terms of competitive leases shall be for five years—for noncompetitive leases, ten years. (7) Noncompetitive leases in force before the adoption of the act may be subject to only one extension, however. An additional two years may be added if drilling for oil is going on at the time of the expiration. It has not been announced when the Senate will debate the proposal.

Telephone and Telegraph



Eisenhower Appoints N. J. Lawyer to FCC Post

PRESIDENT Eisenhower has appointed Edward K. Mills, Jr., to fill the vacancy on the Federal Communications Commission which occurred when John C. Doerfer resigned his position. Mr. Mills is a leading member of the New Jersey bar and was approached once before regarding membership on the commission.

In 1957 the President asked him to join the FCC when George C. McConaughy resigned. He declined, however, when he was advised that his appointment did not necessarily include the position of chairman. At that time he was serving as deputy administrator of the General Services Administration.

Mr. Mills is a native of Morristown, New Jersey, and he has served as Republican mayor of that community. He attended Princeton (AB, 1928), and received his degree in law at Yale in 1931. It is believed that President Eisenhower's appointment of Mills to the commission is based on his reputation for integrity, hard work, and extensive knowledge of law.

It is understood that the appointment was strongly endorsed by the New Jersey Republican delegation.

Transatlantic Cable Capacity May Be Doubled

USERS of the international telephone cable may soon be able to literally get a word in edgewise if American Telephone and Telegraph Company's latest experiments in telephone transmission prove a success. The new system which AT&T hopes to put in operation during the summer months would double the present capacity of the international cable by taking advantage of the gaps between normal speech.

The system, called Time Assignment Speech Interpolation (TASI), would make use of occupied cable channels when the channel momentarily was not in use—such as when one person is listening, pausing to collect thoughts, or taking a breath. The present cable to England contains 96 channels and can accommodate 48 conversations. The TASI system would change voice paths, utilizing the idle moments on occupied circuits. Thus, the conversation would use several different channels, jumping from one to another as gaps in transmission occur. Upon reaching the listener the system would sort out the TASI signals and reunite them to assure smooth transmission while maintaining complete privacy. The device which scans the channels for vacant space

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takes some 8,000 glances per second to see if space is available. The \$3.5 million system was developed by Bell Telephone Laboratories and there is the hope that this system may also be used for domestic long-distance calls when circuits are at peak use.

With the steady increase of trans-oceanic telephone use the perfection of such a system could vastly increase the number of circuits available without the expense of laying additional cables to England and the continent. The same advantages and savings that could be made in domestic transmission of long-distance calls could be realized should AT&T's plans work out.

Phone Tax Likely to Be Retained

MOST experienced observers in Washington feel that the 10 per cent telephone excise tax will be renewed by Congress in spite of strong opposition from the telephone companies. This seems especially true since the Eisenhower hope of achieving a balanced budget is based, at least in part, on revenues derived from this tax source.

Governor Rockefeller of New York has waged a strong battle to prevent the federal tax from being renewed so that his state could adopt this easy method of collecting income. A good many people would like to see the present federal tax retained (with hopes of having it abolished in a few years) rather than give it to the states since it is feared that once the states adopt such a tax there will be no chance of repeal in the future.

At the present time there are about 105 bills in Congress for the repeal of the tax. Numerous articles and speeches have been introduced in the *Congressional Record* asking for the removal of the tax. How-

ever, in spite of congressional interest and the hard battle fought by the telephone companies it is agreed by most that the tax will be continued. There is the slight possibility that in the congressional rush of an election year some tax relief might be granted. Should this happen it is felt that the telephone tax would be the prime target but most observers see no such move in sight at the moment.

Voice of America Continues To Penetrate Russia

THE Voice of America estimates that between 60 and 70 per cent of the radio broadcasts beamed at Russia are now being received in that country. Ever since Soviet Premier Khrushchev's visit to the United States there has been a general slackening of jamming activities on the part of the Soviet monitors. At the time of Khrushchev's visit the jamming appeared to have been stopped, in order that the Russian people might be advised of their leader's reception in the United States.

Voice of America's program manager, Barry Zorthian, noted that selected jamming is still used when a monitor hears something that he especially dislikes, but an increase in programs that could be received was noted.

Mr. Zorthian made his remarks regarding Soviet jamming operations when he spoke before a panel discussion on "Reporting the Struggle for Peace," which was held at the School of International Service, American University, in Washington, D. C.

Independent Telephone Companies Show 1959 Growth

THE United States Independent Telephone Association has recently re-

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leased a compilation of statistics which indicate that the independent telephone companies had a station gain of 5.9 per cent as of December 31, 1959. The independent telephone companies now number some 3,560 companies, serving 10,785,000 telephones. During this period total investment increased from \$3,187,050,000 to \$3,630,298,000. Mergers and consolidations caused a decrease in independent companies from 3,876 to 3,560; however, stations increased from 10,184,800 to 10,785,000, accounting for the gain of 5.9 per cent.

An interesting comparison of the Bell system and the independent companies was also issued. It showed that of the total telephones 60,110,000 were Bell system and 10,785,000 were independents. The Bell system, with 23 operating companies, had 7,050 exchanges while the independents had 3,560 companies with 10,760 exchanges.

Investment in Bell system plants totaled \$22,847,768,000 and gross revenues reached \$7,571,536,000. During this same period the independents had revenues of \$881,832,200 with plant investments of \$3,630,298,000.

Eighty-five per cent of the independent companies now are dial operated and they hire 100,000 employees as compared to the Bell system's 597,100.

House Continues Minimum Wage Hearings

THE House Committee on Education and Labor is continuing its look into the possibility of increasing the minimum wage. At least a month more will be required to hear the great number of witnesses who want to get their views on record regarding this matter.

Of particular interest to the telephone

industry will be the presence or absence of a provision which would exempt telephone operators' wages at small exchanges of 750 or less from the minimum wage requirements. The legislative picture is still in a state of flux and it is impossible to say what type of bill the House committee will report.

The Senate bill might be cleared for action should the civil rights bill be disposed of. The Senate Labor and Public Welfare Committee has completed public hearings and it is expected that an executive session will clear the bill for Senate action as soon as the legislative calendar permits. There is the possibility of many modifying amendments being offered when the measure is debated.

In testifying before the House group the Communications Workers of America offered testimony urging repeal of the provisions which exempt small exchanges.

George Meany, president of AFL-CIO, advised the committee that he would not object to increasing the minimum wage in steps rather than all at once.

ASCAP to Change Rules

IN an effort to help cut down "payola" abuses the American Society of Composers, Authors, and Publishers (ASCAP) has announced certain changes in its royalty fee rules for network broadcasts. The new rules provide that credit for theme and background use of members' music on network programs, appearing twice or more a week, will be reduced to 25 per cent of the credit earned for similar use on programs which appear once a week. The new rule has been approved by the Justice Department, and ASCAP believes that it will remove any incentive for artificially stimulated performances which would provide disproportionate returns to members.



Financial News and Comment

By OWEN ELY

Bell Officials Analyze Stringent Postwar Regulatory Standards

THE brochure on "Profit, Performance, and Progress," prepared by six officials of the Bell system, was publicly released a few weeks ago and reviewed in this department. Shortly afterward the writer discussed several related subjects with Bell people, among which were company earnings objectives and the fair value rate base.

Bell officials point out that before World War II, and especially in the 1920's, Bell system earnings reflected reasonable regulatory standards, and kept pace with earnings of nonregulated competitive industry. Thus the system was able to maintain a strong position in the investment market, attract new capital on favorable terms, and provide needed service expansion and improvement.

But the postwar period brought the problem of severe inflation, coupled with the heavy growth required by suddenly increased demands for service. The Bell system had difficulties in adjusting its financial results to these changes because regulatory concepts had also gone through an evolution. Original cost had largely replaced fair value as a rate base concept, and rate of return was frequently based on "cost of capital." So long as the

system's earnings were adequate to "attract capital," little regulatory consideration was given to long-term needs or the earnings of competitive industry.

At the beginning of the postwar period AT&T earnings were very low and the \$9 dividend was not fully earned. Hence, to meet rapid growth new capital had to be largely in the form of debt, resulting in a sharp decline in the equity ratio. With respect to regulation, a Bell official says, "We had to let expediency dictate our course. We played down fair value. Rate cases were filed seeking a rate of return in the 6 per cent to 6½ per cent range. Speed was the essence in obtaining more income. As a result of these practical considerations, service was un-

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derpriced. Our realized earnings stood in unfavorable contrast with the nonregulated sector of the economy. Thus, we seemed to publicly abdicate the concepts on which the long-term financial safety of the business has to depend."

HOWEVER, in recent years the picture has improved somewhat and the company has been able to attract large amounts of equity capital, reduce the debt ratio again to a reasonable basis, increase surplus, and improve the service, though earnings still averaged below 6½ per cent. "It is little wonder," an official states, "that both inside and outside the business many conclude that we can get along satisfactorily on this basis." Evidently as a means to combat this assumption, the brochure on "Profit, Performance, and Progress" was prepared. The starting point was to study the competitive profits system, which has produced a dynamic economy and a rising standard of living by successfully meeting consumer needs with new and better products at lower cost. (Since this was discussed in detail in the review of "Profit, Performance, and Progress" it is omitted here.)

Regulation of utilities is quite generally regarded as designed to remedy the lack of direct competition and protect the consumer against monopolistic abuses. However, this concept is one-sided and somewhat negative. Consumer interest also requires that regulation preserve and encourage the dynamic development of utility operations. This goal is the same as that of unregulated industry and involves freedom of decision and the ability to improve service, introduce innovations, and keep pace with the entire economy. In other words, regulation must not only guard the consumer against the utility, but also protect the utility against the consumer when short-term considerations

as to low rates are given too much weight. As one utility commissioner remarked, "service at the lowest cost may be the most expensive kind."

BUT regulatory agencies have sometimes assumed that the rate of return need be no higher than that required to attract new capital in some form—the so-called "bare bones" theory. In such cases the commission takes for granted management's ability to continue to do a good job and provide for continued growth, service, etc. There may also be the old fallacy involved of assuming that regulation automatically "guarantees" profits—which is definitely not the case. Regulation only permits such profits as management is able to earn up to a prescribed maximum.

The weakness of a "cost-of-capital—attraction-of-capital" formula as an exclusive measure of the reasonableness of the return allowance is that it places the utility in the position of a marginal producer, merely surviving. It may become a damper on initiative and on the investment of capital funds to obtain cost reduction or better service. A liberal concept of regulation recognizes that there should always be some differential reward to insure such "plus" efforts. One illustration of the bare bones theory is the plight of the transit companies which was not, in earlier days at least, due entirely to automobile competition.

AN exclusive cost-of-capital test may be "at the threshold of confiscation," some Bell officials feel, because it is difficult to set up any exact method of calculating cost of capital. Frequently there is used the market prices of outstanding stock, or prices received for new issues, as a yardstick. It appears obvious, however, that the essential factor determining

PUBLIC UTILITIES FORTNIGHTLY

these prices is the expected level of future earnings, not only the past or present earnings. Moreover, if cost of capital is based on comparative data with other companies or industries, this raises the question of relative risk, for which no quantitative measurement has yet been developed. Other problems include determining the cost effects of variations in capital structure, equitable adjustment to offset the effects of inflation, etc.

BELL system officials urged that the "comparable or competitive earnings" concept should be used along with cost of capital, in determining the proper long-term earnings for regulated utilities; earnings permitted in reasonable relationship for nonregulated industry would provide the necessary requirements in excess of cost of capital. They urged that programs of education and implementation should be carried out toward this end.



Nearly 107 million gas appliances now are in daily service in homes throughout the United States. The nation's 39 million gas-using families — 30 million served by utility companies and the remainder by LP "bottled" gas — average nearly three appliances each.

STATISTICS made available by Bell officials indicate that despite the declining value of the share owners' invested dollar, the rate of return allowed by commissions during 1948-56 has been less than 6 per cent, contrasted with nearly 7 per cent in the 1920's—a decline of 15 per cent. Moreover, during 1920-30 about 80 per cent of the decisions used fair value as a rate base, while during 1946-56 the percentage was only 27 per cent—although wholesale prices increased about 70 per cent.

During the 1920's the earnings of electric utilities and the Bell system were not too far below those of manufacturing companies, but in the postwar period the rate of return has lagged far behind that of manufacturing companies as indicated by the following tables:

	RETURN ON CAPITAL			
	All U. S. Mfg.	50 Largest Mfg.	20 Operating Electric	Bell System
Average 1927-45	5.7%	8.2%	6.3%	6.3%
Average 1946-57	9.5	12.2	5.7	5.9
Long-term Average 1927-57	7.2	9.7	6.0	6.1

	RETURN ON COMMON EQUITY		
	Moody's 125 Industrials	20 Operating Electric	Bell System
Average 1927-45	8.4%	8.3%	7.2%
Average 1946-57	14.8	9.5	8.0
Long-term Average 1927-57	10.9	8.8	7.5

Although the growth rates were parallel in the two periods, less than 10 per cent of Bell's additional capital came from reinvested earnings in the postwar period compared with 17 per cent during the 1920's. Thus in 1957 Bell "plowed back" only about 17 per cent of earnings while 20 industrial companies reinvested 75 per cent of earnings.

As the result of the postwar decline in earning power the market price of AT&T, which followed the trend of the Dow-

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Jones industrial average fairly closely during 1920-47, has since lagged far behind the Dow.

A statistical study for 441 largest industrial companies indicated that, in 1956-57, realized rate of return varied from about 10 per cent to over 15 per cent depending on the degree of risk, the companies being classified in the order of earnings-price ratios as a measure of the degree of risk.

TVA Plans Big Expansion

BRIGADIER GENERAL HERBERT D. VOGEL, chairman of the board of Tennessee Valley Authority, described the authority's huge expansion plans in the March-April issue of the *Analysts Journal*. The authority's first sale of bonds to the public is expected some time after July 1st, and within the next five or six years the total amount to be issued may reach three-quarters of a billion dollars.

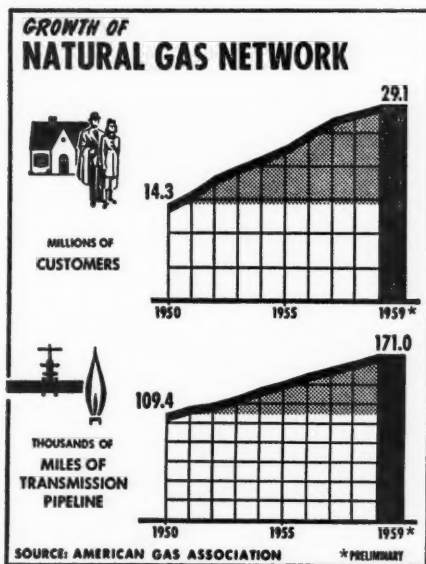
These funds will be required to help TVA finance the power needs of a system "whose rate of growth has been unprecedented in the electric utility field." In the past twenty years TVA generating capacity has multiplied ten times, and it has doubled in the past five years. Output is now nearly 60 billion kilowatt-hours or about 10 per cent of the nation's total. It is increasing at over 10 per cent a year and General Vogel estimates that the authority will have to install one million kilowatts new capacity annually at a cost of some \$200 million.

About half of TVA's output goes to defense agencies, including the AEC. It also sells to 25 large industrial companies, and through 150 municipalities and co-ops (with two small private utilities) wholesale electricity to a population of some 4.5 million, spread over parts of Tennessee, Kentucky, Mississippi, Alabama,

Georgia, North Carolina, and Virginia. Including some non-TVA facilities, total capacity is now about 11.4 million kilowatts, about one-third hydro and two-thirds steam. Present plans for expansion call for addition of 2.4 million kilowatts, mainly steam. The first TVA steam plant to be financed (at least in part) by the new bonds will eventually have four 600,000-kilowatt units and will obtain its coal from Peabody at less than \$3 a ton, the lowest fuel cost of any steam plant in the country.

As a result of TVA's low rates more than a quarter of a million homes in the area are heated entirely by electricity, nearly half of the total for the United States. Average residential use is more than 8,000 kilowatt-hours—roughly similar to that in the Pacific Northwest.

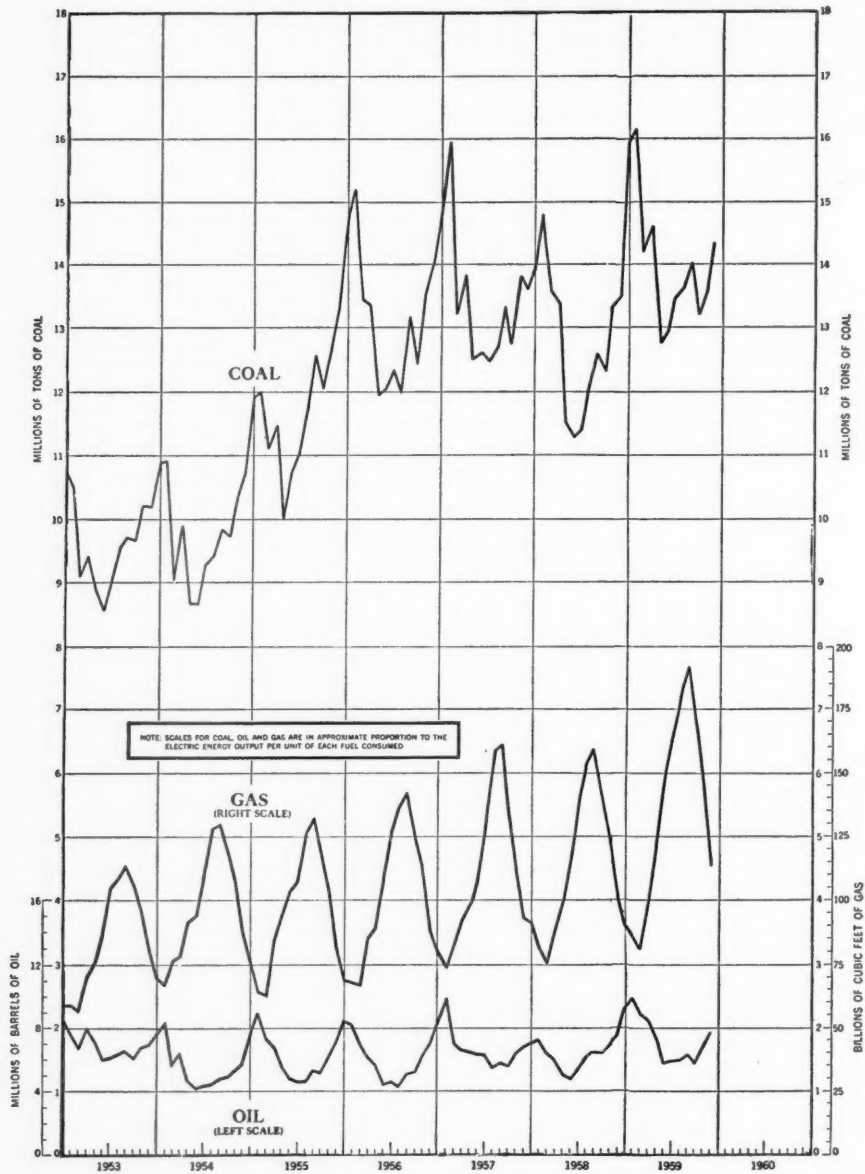
To service the forthcoming bond issue it is estimated that for fiscal 1961 TVA



More than one million customers were added to the nation's fast-growing natural gas network during 1959 when transmission facilities were increased by 8,000 miles. Natural gas customers have more than doubled since 1950, and the number of customers using all types of gas, including LP "bottled gas," now totals more than 41 million.

PUBLIC UTILITIES FORTNIGHTLY

MONTHLY CONSUMPTION OF FUEL BY ELECTRIC UTILITY POWER PLANTS FOR PRODUCTION OF ELECTRIC ENERGY



Source, Federal Power Commission

FINANCIAL NEWS AND COMMENT

will have net power income of nearly \$61 million (to which could be added some \$51 million depreciation) available for debt service, payments to the Treasury, and reinvestment in power generation, etc.; debt service will have a prior claim on the entire cash flow.

Electric Utilities Burning More Gas

THE accompanying chart shows the monthly consumption of fuel (coal, gas, and oil) during the years 1953-59. Since 1955 consumption of gas has increased rather sharply while use of coal and oil increased at a slower rate. The amount of hydroelectric power available is of course a factor in the overall picture; and the use of new and more efficient steam-generating plants—such as Philadelphia Electric's new plant which will burn only six-tenths of a pound of coal per kilowatt-hour—is another factor.

There might be some question as to why utilities should increasingly turn to gas as a fuel when the price is constantly rising. While data are not yet available for the year 1959, following is the average cost in cents per million Btu for the three types of fuel, for the electric utility industry:

Years	Coal	Oil	Gas
1958	27.2	39.2	21.5
1957	27.5	44.2	20.2
1956	26.1	38.3	18.9
1955	24.9	33.6	18.7
Per cent increase			
1955-58	9%	17%	15%

MANY of the southern and southwestern utilities which use gas have long-term purchase contracts, hence only as these come due do they feel the pinch of rising field prices for gas. Most of them also (except in California) have fuel adjustment clauses in their rate structures

so that they can pass most of the higher costs on to consumers. (There is a current trend toward adjusting also for increased generating efficiency.) For this reason gas still seems to be the favored fuel.

However, there are some exceptions—Tampa Electric is now burning coal brought down the Mississippi by barge, having worked out a favorable shipping arrangement.

Last year the company, together with Virginia-Carolina Chemical Company and Peabody Coal Company, formed two shipping firms—Gulf Coast Transit Company and Mid-South Towing Company—which bring coal to the utility's Gannon power station and on the return trip carry phosphate products from Tampa to principal points on the Gulf coast and up the Mississippi.

Union Electric to Save \$30 Million by Pumping Water Uphill

UNION ELECTRIC COMPANY proposes to build a \$50 million pumped storage electric-generating unit, on the east fork of the Black river in Reynolds county, Missouri. The plant will use the same water over and over again and in effect will store some 2,750,000 kilowatts of off-peak steam-generated power, equal to about one-tenth of the power needs in the area.

The project, to be known as the Taum Sauk plant, will generate electricity late at night and use it to pump the water uphill to a reservoir; next day the water would be allowed to run downhill to generate extra electricity to take care of peak demands. In recent years pumping equipment has been developed which, when operated in reverse, will generate electricity.

PUBLIC UTILITIES FORTNIGHTLY

The new plant, with generating capacity of 350,000 kilowatts, is said to exceed in size two similar projects already under construction at Niagara Falls and in Great Britain. While work is expected to begin shortly (assuming that regulatory approval is obtained), it will take about three years to complete.

The plant would consist of a dam about 60 feet high and 350 feet long, and two storage reservoirs. The dam would impound about 6,000 acre-feet in a lower pool and the water from this reservoir would be pumped into a high-head energy storage reservoir having a capacity of about 4,000 acre-feet.

UNION ELECTRIC expects to save over \$30 million in a 12-year period over conventional equipment producing the same volume of electricity, or an average of \$2.5 million a year. While about one-third of the steam power used to pump the water uphill is lost (only two-thirds being recovered by the hydro power obtained later), nevertheless, the fact that steam power can be generated at night when there is no heavy demand, and the

stored power used to generate electricity during peak demand hours, more than offsets this loss of efficiency and produces a net profit.

It is, of course, necessary to have a favorable site for a plant of this type; Union Electric abandoned the original location because of geological defects. The project has been studied for six years.

PG&E Signs Power Contract

OROVILLE - WYANDOTTE IRRIGATION DISTRICT and the Pacific Gas and Electric Company have signed a 50-year contract which will make possible the construction of a \$62 million South Fork Feather river water and power project. OWID President D. D. Updegraff and S. L. Sibley, vice president and general manager of PG&E, signed the agreement in Oroville late last month.

Under terms of the contract PG&E will pay the district \$3,158,000 a year for electricity to be generated in three South Fork project powerhouses, enough money to cover all costs of building and operating the new water and power system.

FINANCIAL DATA ON ELECTRIC UTILITY STOCKS

Annual Rev. (Mill.)		3/23/60 Price About	Divi- dend Rate	Approx. Yield	Recent Share Earnings	Per Cent Incr. In Sh. Earn.		Price- Earnings Ratio	Div. Pay- out	Approx. Common Stock Equity
						Recent	Aver.			
\$324	S American Elec. Power	51	\$1.80	3.5%	\$2.43Ja	5%	6%	21.0	74%	38%
57	O Arizona Pub. Serv.	39	1.20	3.1	*1.81Se	D5	9	*21.6	66	26
12	O Arkansas Mo. Power	20	1.00m	5.0	1.37De	—	2	14.6	73	32
38	S Atlantic City Elec.	30	1.10	3.7	*1.45Ja	12	8	*20.7	74	31
169	S Baltimore Gas & Elec.	27	1.00	3.7	1.41De	18	8	19.1	71	42
7	O Bangor Hydro-Elec.	40	2.00	5.0	3.10De	23	5	12.9	65	33
7	O Black Hills P. & L.	31	1.48	4.8	2.57Ja	1	4	12.1	58	38
116	S Boston Edison	61	3.00	4.6	3.69De	4	4	16.5	81	45
31	A Calif. Elec. Power	18	.80	4.4	*1.15De	1	10	*15.7	70	32
24	O Calif. Oreg. Power	34	1.60	4.7	1.81De	D9	—	18.8	88	33
10	O Calif. Pac. Util.	19	.90	4.7	1.30De	22	4	14.6	70	33
76	S Carolina P. & L.	37	1.32	3.6	2.23F	11	6	16.6	59	37
34	S Cent. Hudson G. & E.	21	.80	3.8	*1.41De	5	8	*14.9	57	35
26	O Cent. Ill. E. & G.	35	1.44	4.1	2.21Ja	4	13	15.8	65	42
43	S Cent. Ill. Light	36	1.52	4.2	2.45Ja	20	10	14.7	62	29
55	S Cent. Ill. P. S.	48	1.92	4.0	2.71Ja	5	13	17.7	71	35
20	O Cent. Louisiana Elec.	48	1.80	3.8	2.25De	2	8	21.3	80	33
42	O Cent. Maine Power	25	1.40	5.6	*1.83Ja	12	—	*13.7	76	32

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Annual Rev. (Mil.)	(Continued)	3/23/60 Price About	Divi- dend Rate	Approx. Yield	Recent Share Earnings	Per Cent Incr. In Sh. Earnings Recent	5-yr. Aver.	Price- Earnings Ratio	Div. Pay- out	Approx. Common Stock Equity
160	S Cent. & South West	34	.96	2.6	1.36De	7	6	25.0	70	37
12	O Cent. Vermont P. S.	20	1.08	5.4	*1.36Ja	D1	1	*14.7	79	33
140	S Cincinnati G. & E.	33	1.50	4.5	1.97De	6	3	15.7	76	40
8	O Citizens Util. "B"	12	.56	4.7	.69Se	6	6	17.4	81	48
130	S Cleve. Elec. Illum.	50	1.80	3.6	2.95De	13	9	16.9	61	46
7	O Colo.-Cent. Power	21	.75	3.6	1.08De	8	7	19.5	69	45
52	S Columbus & S. O. E.	42	1.60	3.8	2.45Ja	21	5	17.1	65	31
454	S Commonwealth Edison ...	58	2.00h	5.8h	3.71De	10	6	15.6	54	42
16	A Community Pub. Serv. ..	27	1.00	3.7	1.49De	13	5	18.1	67	42
85	O Conn. Lt. & Pr.	23	1.10	4.8	*1.40Ja	D2	5	*16.4	79	36
582	S Consol. Edison	63	3.00	4.8	*3.92De	5	5	*16.1	76	36
258	S Consumers Power	54	2.60	4.8	3.57Ja	12	4	15.1	73	39
90	S Dayton P. & L.	50	2.40	4.8	3.22De	—	1	15.5	74	36
53	S Delaware P. & L.	72	2.28	3.2	3.20De	10	9	22.5	71	31
267	S Detroit Edison	40	2.00	5.0	2.39F	8	3	16.7	84	46
145	A Duke Power	45	1.40i	3.1	2.18Oc	NC	9	20.6	64	42
101	S Duquesne Light	23	1.10	4.8	*1.44De	3	5	*16.0	76	34
36	O East. Util. Assoc.	41	2.20	5.4	3.02De	10	6	13.6	73	33
3	O Edison Sault Elec.	18	.90	5.0	1.43Se	27	8	12.6	63	34
17	O El Paso Elec.	38	1.16	3.1	1.69De	8	7	22.5	69	36
12	S Empire Dist. Elec.	26	1.36	5.2	1.82De	14	3	14.3	75	33
62	S Florida Power Corp.	31	.80	2.6	1.14De	D5	9	27.2	70	41
155	S Florida P. & L.	59	.96	1.6	1.93De	10	17	30.6	50	42
4	O Florida Pub. Utils.	17	.72	4.2	1.22Se	3	3	13.9	59	31
213	S General Pub. Util.	24	1.12	4.7	*1.62Se	4	5	*14.8	69	40
7	O Green Mt. Power	19	1.10	5.8	1.28De	D10	3	14.8	86	38
78	S Gulf States Util.	30	1.00	3.3	1.36Ja	4	8	22.2	74	33
54	A Hartford Electric	63	3.00	4.8	*3.65De	2	2	*17.3	82	40
27	O Hawaiian Elec.	55	2.50	4.5	3.28De	8	7	16.8	76	34
94	S Houston L. & P.	76	1.60	2.1	3.05Ja	4	8	24.9	52	41
34	S Idaho Power	47	1.70	3.6	2.32De	D10	5	20.3	73	33
104	S Illinois Power	51	2.00	3.9	2.72Ja	28	14	18.7	74	36
54	S Indianapolis P. & L.	42	1.70	4.0	2.46De	12	8	17.2	69	37
33	S Interstate Power	19	.90	4.7	1.17De	7	4	16.2	77	28
42	S Iowa Elec. L. & P.	37	1.80	4.9	2.40De	16	3	15.4	75	40
51	S Iowa-Ill. G. & E.	38	1.90c	5.0	2.58De	10	4	14.7	74	40
47	S Iowa P. & L.	34	1.60	4.7	2.06De	1	3	16.5	78	31
40	O Iowa Pub. Service	18	.80	4.4	1.26De	12	5	14.3	63	32
17	O Iowa Southern Util.	29	1.48	5.1	2.18Ja	8	9	13.3	68	40
61	S Kansas City P. & L.	49	2.20	4.5	3.10Ja	1	5	15.8	71	34
36	S Kansas G. & E.	46	1.64	3.6	2.54Ja	—	7	18.1	65	38
54	S Kansas P. & L.	34	1.42	4.2	2.40De	14	8	14.2	59	36
47	O Kentucky Util.	36	1.60	4.4	2.73De	15	6	13.2	59	40
7	O Lake Superior D. P.	25	1.28	5.1	1.68Se	7	2	14.9	76	41
136	S Long Island Lighting	34	1.40	4.1	*2.04De	6	11	*16.7	69	36
66	S Louisville G. & E.	45	1.40	3.1	2.47De	11	8	18.2	57	46
11	O Madison G. & E.	48	1.80	3.8	4.03Se	16	2	11.9	45	45
5	A Maine Pub. Ser.	20	1.20	6.0	1.50Ja	D4	2	13.3	80	43
7	O Michigan G. & E.	76	1.70j	5.4	5.67Se	26	9	13.4	30	37
198	S Middle South Util.	26	1.00	3.8	1.40De	8	7	18.6	71	34
30	S Minn. P. & L.	35	1.60	4.6	2.22F	D3	3	15.8	72	33
16	S Missouri P. S.	18	.72f	4.0	1.03Ja	13	3	17.5	70	25
8	O Missouri Util.	26	1.36	5.2	1.67De	1	—	15.6	81	35
44	S Montana Power	25	.80	3.2	*1.36De	3	9	*18.4	59	39
167	S New England Electric	21	1.08	5.1	1.29Se	7	1	16.3	84	36
46	O New England G. & E.	23	1.16	5.0	1.72Ja	5	6	13.3	67	41
105	S N. Y. State E. & G.	26	1.20	4.6	*1.80Ja	D6	8	*14.4	67	40
285	S Niagara Mohawk Power ..	35	1.80	5.1	*2.07De	D2	—	*16.9	87	29
104	O Northern Indiana P. S.	53	2.20	4.2	3.13De	13	5	16.9	70	36
170	S Northern Sts. Power	26	1.10	4.2	1.41De	8	6	18.4	78	36
12	O Northwestern P. S.	21	1.10	5.2	1.66De	21	6	12.6	66	31
138	S Ohio Edison	63	2.96	4.7	3.96De	10	3	15.9	75	40
58	S Oklahoma G. & E.	30	1.12	3.7	1.45Ja	—	6	20.7	77	31
29	O Orange & Rockland Utils. .	30	1.10	3.7	*1.53De	20	14	*19.6	72	29
19	O Otter Tail Power	32	1.80	5.6	2.78De	19	6	11.5	65	34

PUBLIC UTILITIES FORTNIGHTLY

Annual Rev. (Mill.)		(Continued)	3/23/60 Price About	Divi- dend Rate	Approx. Yield	Recent Share Earnings	Per Cent Incr. In Sh. Earn. Recent	Price- Earnings Ratio	Div. Pay- out	Approx. Common Stock Equity	
535	S	Pacific G. & E.	64	2.60	4.1	3.70De	D1	6	17.3	70	34
52	O	Pacific P. & L.	37	1.60	4.3	*1.90N	D28	7	*19.5	84	30
138	S	Penn P. & L.	26	1.25	4.8	1.75Ja	13	4	14.9	71	33
264	S	Phila. Elec.	49	2.24	4.6	2.90De	5	5	17.0	77	38
36	O	Portland Gen. Elec.	28	1.20	4.3	1.76De	D2	7	15.9	68	37
82	S	Potomac Elec. Power	28	1.32	4.7	*1.79De	7	8	*15.6	74	37
97	S	Pub. Serv. of Colo.	54	1.90	3.5	2.57Se	—	5	21.0	74	33
369	S	Pub. Serv. E. & G.	37	1.80	4.9	2.42De	7	4	15.3	74	34
88	S	Pub. Serv. of Ind.	44	2.10	4.3	2.72Ja	D6	3	16.2	77	32
34	O	Pub. Serv. of N. H.	19	1.04	5.5	1.36F	7	—	14.0	76	34
17	O	Pub. Serv. of N. Mexico ..	31	1.00	3.2	1.44Ja**	14	9	21.5	70	36
32	S	Puget Sound P. & L.	32	1.44	4.5	2.11De	7	8	15.2	68	38
65	S	Rochester G. & E.	46	1.80o	3.9	*3.32De	14	4	*13.9	54	34
10	S	St. Joseph L. & P.	31	1.50n	4.8	2.13De	23	6	14.6	70	37
71	S	San Diego G. & E.	25	1.12	4.5	1.66De	26	9	15.1	67	39
12	O	Savannah E. & P.	26	1.12	4.3	1.26Ja	D13	1	20.7	90	32
12	O	Sierra Pacific Pr.	35	1.60	4.6	2.47Ja	24	14	14.2	65	33
280	S	So. Calif. Edison	60	2.60	4.3	3.87De	2	5	15.5	67	37
50	S	So. Carolina E. & G.	39	1.40	3.6	1.75N	D6	11	22.3	80	33
7	O	Southern Colo. Pr.	19	.90	4.7	1.18N	D22	4	16.1	76	36
297	S	Southern Co.	42	1.40	3.3	1.94Ja	6	9	21.6	72	34
21	S	So. Indiana G. & E.	33	1.60	4.8	2.47Ja	D1	2	13.4	65	36
8	O	So. Nevada Power	29	1.10	3.8	1.86Ja	14	6	15.6	59	46
4	O	Southwestern P. S.	17	.72	4.2	1.00Ja	3	5	17.0	72	28
47	S	Southwestern P. S.	24	.84	3.5	1.05Ja	16	7	22.9	80	37
36	A	Tampa Electric	31	.72	2.3	1.00F	14	7	30.7	72	36
183	S	Texas Utils.	74	1.92	2.6	2.93De	7	9	25.3	66	41
47	S	Toledo Edison	16	.70	4.4	1.12De	—	2	14.3	63	29
17	O	Tucson G. E. L. & P.	24	.76	3.2	1.15De	13	9	20.9	66	41
147	S	Union Elec.	33	1.64	5.0	*1.88De	4	3	*17.6	87	35
39	O	United Illum.	28	1.38	4.9	*1.69De	3	1	16.6	82	55
6	O	Upper Peninsula Pr.	29	1.60	5.5	1.73N	D3	2	16.8	92	32
50	S	Utah Power & Light	34	1.32	3.9	1.85Ja	5	5	16.2	71	44
151	S	Virginia E. & P.	40	1.20	3.0	1.71Ja	2	9	23.4	70	39
36	S	Wash. Water Pr.	41	2.00	4.9	*2.63Ja	9	8	*15.6	76	32
152	S	West Penn Elec.	36	1.70	4.7	2.38Ja	5	5	15.1	71	31
77	O	West Penn Power	59	3.00	5.1	3.46Se	6	6	17.1	87	38
13	O	Western Lt. & Tel.	41	2.00	4.9	3.21Ja	27	6	12.8	63	40
32	O	Western Mass. Cos.	24	1.20	5.0	1.66De	—	—	15.1	72	48
119	S	Wisc. El. Pr. (Cons.)	39	1.80	4.6	2.87De	36	1	13.6	63	40
48	O	Wisconsin P. & L.	32	1.48	4.6	2.34De	15	6	13.7	63	38
46	S	Wisconsin P. S.	26	1.30	5.0	1.90De	7	5	13.7	68	36
Averages					4.3%		7%	6%	17.0	71%	

Foreign Companies

215 S	Amer. & Foreign Pr.	8	\$.50	6.3%	\$1.79Se	D10	0%	4.5	28%	57%
129 A	Brazilian Traction	4½	—	—	.64De†	D58	—	7.0	—	76
83 A	British Col. Pr.	34	1.40	4.1	1.95De†	D16	7	17.4	72	28
20 O	Calgary Power	18	.40	2.2	.89De†	11	18	20.0	45	31
19 A	Gatineau Power	37	1.50	4.1	1.98De	D22	9	18.7	76	35
49 O	Mexican L. & P.	14	1.00b	7.1	1.66De†	D16	—	8.4	60	41
16 A	Quebec Power	34	1.60	4.7	2.41De	3	9	14.1	66	55
77 A	Shawinigan Water & Pr. ..	28	.68	2.4	1.45De	D10	8	19.3	47	40

*Deferred taxes resulting from liberalized depreciation are not normalized. If they had been normalized the price-earnings ratio would be higher. †December, 1958. **On average shares. D—Decrease. NC—Not comparable. A—American Stock Exchange. O—Over-counter or out-of-town exchange. S—New York Stock Exchange. Ja—January; F—February; Ma—March; Ap—April; My—May; Je—June; Jy—July; Au—August; Se—September; Oc—October; N—November; De—December. b—Also 5 per cent stock dividend May 1, 1959. c—Also 5 per cent stock dividend June 10, 1959. f—Also stock dividend of one-half per cent quarterly. h—Also 2½ per cent stock dividend December 1, 1959, included in yield. i—Also 15 per cent stock dividend January 29, 1959. j—Also 3 per cent stock dividend (paid each year end) included in the yield. k—Also 5 per cent stock dividend February 20, 1959. m—Also 5 per cent stock dividend June 15, 1959. n—Also 10 per cent stock dividend November 20, 1959. o—Also 3 per cent stock dividend January 25, 1960.



What Others Think

Recent Periodical Reviews on Regulation

THE publication of special issues on phases of industrial and economic phenomenon in the United States is becoming an increasingly important contribution to business and professional literature in this area. This is certainly true in the field of public utility regulation. In recent years, for example, the law schools of Georgetown University, George Washington University, and Duke University have published comprehensive symposium issues on the problems of the Federal Power Commission in the field of natural gas regulation.

Because these special issues do not regularly come to the attention of people engaged in day-to-day public utility business or professional activity, a reference to their availability and a brief review of content when they occur might be of interest to readers of this publication. The *Iowa Business Digest*, published by the Bureau of Business and Economic Research, College of Business Administration, State University of Iowa, selected for its fall 1959 topic of special coverage "Current Problems in the Regulation of Public Utilities." The director of the *Iowa Business Digest* is C. Woody Thompson, for many years a highly reputed authority in the field.

The special issue on public utility regulation contains two articles by Professor

Thompson. One of these is an excellent roundup review article on the background and salient problems of utility regulation. The other deals with two problems related to depreciation: (1) the proposal to substitute value for original cost, otherwise labeled as "economic depreciation"; (2) the regulatory complications growing out of the use of accelerated depreciation for tax purposes by public utilities.

THE other authors in the special issue of *Iowa Business Digest* are John C. Miller, who writes on the "Field Pricing of Natural Gas," Lionel W. Thatcher, whose subject is "Present Return Allowances by Regulatory Commissions Are Adequate," and Roy J. Sampson, who deals with the difficulties of railroad rate making. All these authors are in the academic field. Mr. Miller is associate professor of the College of Commerce and Industry, University of Wyoming. Dr. Thatcher is economics professor at the University of Wisconsin, and Dr. Sampson is assistant professor of transportation at the University of Oregon School of Business Administration.

Professor Thompson's review of the development of regulation of public utilities probably contains little which is actually new to anyone who has followed this much harrowed ground for bread-

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and-butter purposes, either business, professional, or regulatory. But it has the special virtue of a clear and succinct synthesis of what regulation is supposed to have accomplished historically and the main roadblocks it has run into through the years. It points to the successive phases of regulatory development during which the legislatures, the courts, and finally the commissions have assumed dominant rôles.

The classical controversy between cost *versus* value in the rate base is dealt with quite objectively. Professor Thompson puts his finger unerringly upon the prime explanations of why utility companies advocate a reproduction cost basis or some variant thereof. (This is so often ignored or misunderstood by those who are intrigued with the mythical picture of the utilities and their regulators swinging back and forth or "changing sides" with respect to cost *versus* value.)

The plain fact is, as Professor Thompson says, there has been an "almost continuous rise in prices during the last sixty years." Thompson frankly admits that he originally preferred reproduction cost twenty-five years ago on the basis of economic equity and has had no reason to change his mind. The problem is the practical one of making a value rate base workable. The converse of this proposition, of course, is that the argument for original cost rests more on expediency or ease or certainty of computation rather than equity.

THOMPSON then takes up the shift from the emphasis on rate base to rate of return, especially during the last decade when so much stress has been put on cost of capital. He thinks the cost of capital is a valuable test of the reasonableness of rate allowance, provided it is made flexible, not exclusive. He warns of

the danger of substituting the hindsight of regulatory judgment for the foresight of managerial responsibility. While the overall regulatory picture to date is admittedly one of confusion, from Professor Thompson's review it is apparent that he feels the commissions are trying to do a good job with much success.

Dr. Thatcher, in his article on reasonable return, comes to about the same judgment on the performance of the regulatory commissions, but from a somewhat different approach. His position is a defensive one against those who attack the prevailing return allowance as inadequate. His main support lies in the success of utility industries, specifically the electric utility industry, in maintaining the tremendous pace of postwar expansion. He disagrees with the proposition that the return should be higher than the overall cost of capital because of inflation. He thinks that such a rate philosophy is inconsistent with the interest of consumers and unwarranted for equity to investors. His article deals with earnings requirements on common equity expressed in various relative ways exemplified in statistical tables.

ON problems of depreciation which have been the subject of so much discussion, Professor Thompson rejects the various arguments for the introduction of the value element in measuring depreciation allowance or compensation for so-called "economic depreciation." He thinks that as long as new capital requirements necessary to the growth of a utility are at least as large as the sums recovered annually through the operation of depreciation, the business will have its capital intact indefinitely. He refers to the somewhat parallel position taken by the National Association of Railroad and Utilities Commissioners.

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ON the question of regulatory treatment of so-called "tax savings" made through accelerated depreciation, Professor Thompson favors the "flow-through" method of reflecting such financial tax advantages, however temporary, in the revenue requirements structure. But he departs from the more advanced position taken by Professor Ben W. Lewis of requiring a utility to use accelerated depreciation to the extent that regulatory rate fixing would assume that accelerated depreciation advantages have been taken regardless of whether they have as a matter of fact.

Dr. Sampson's article "What's Wrong with Railroad Ratemaking?" is based on the assumption that there is a consensus in favor of maintaining privately controlled unsubsidized railroad systems. If we want this we must overhaul immediately our approach to railroad regulation. A few railroads' price policies must be adopted for rate making. This would require not only a change in basic pricing philosophies of railroad management but also a modification of traditional legal concepts by the Interstate Commerce Commission and other regulatory bodies. It would entail the abandonment of the value-of-service and out-of-pocket cost concepts of rate making and cause considerable shifting of traffic among various carriers, with the end result that each type of carrier would transport those commodities which it can move most efficiently. Dr. Sampson assumes that "we cannot exist as a nation without an efficient transportation system" and that "our railroads will continue to be its backbone within the foreseeable future."

Copies of the *Iowa Business Digest* may be obtained from the Bureau of Business and Economic Research, College of Business Administration, State University of Iowa, Iowa City, Iowa.

Legal Aspects of Rate Base and Rate of Return

A RECENT issue of the *Marquette Law Review* contains an article entitled "Legal Aspects of Rate Base and Rate of Return in Public Utility Regulation." The authors, Francis Joseph and Margadette Moffatt Demet, believe that the original investment cost theory of rate regulation is "repressive, regressive, and backward looking."

They favor, however, the reproduction theory of determination of rate base and rate of return and call upon the commission to be visionary and farsighted in returning to a realistic recognition of the current value concept.

Francis Joseph Demet attended Loras College (BA) and Georgetown University where he received his LLB. Coauthor Margadette Moffatt Demet received a BA at the College of St. Francis and then went on to receive an LLB at Marquette University.

At the outset of the article the authors note that the terms *rate base* and *rate of return* engender a number of diverse considerations and they therefore make the following four definitions: *Rate base*, the valuation placed on utility property for the purpose of arriving at a fair return. *Rate of return*, the percentage of return allowed to a given utility and its investors over and above allowable deductions from gross income. *Reproduction cost*, the value of the utility's property less depreciation at the date of a utility rate proceeding. *Net investment cost*, the actual original cost of utility property less depreciation.

The authors state that the United States Supreme Court in 1898 in *Smyth v. Ames* seemed to recognize for the first time the necessity of a so-called "rate base."

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CONTINUING with a backward look at legal decisions, the authors state that in 1924 the Wisconsin supreme court advanced the "end result theory," which said that it is not the method that is to be reviewed but the result reached by the commission. A year before this the United States Supreme Court warned against businesses which had similar risks.

In 1942 in the case of *Federal Power Commission v. Natural Gas Pipeline Co. of America*, 315 US 575, 42 PUR NS 129, stress was laid on the precept that commissions were not bound to any one formula in arriving at the allowance of a fair return.

Then in 1944 the Supreme Court in the *Federal Power Commission v. Hope Nat. Gas Co.* case, 320 US 591, 51 PUR NS 193, did not approve any particular method of rate base determination but said that the end result and not the method by which the result was arrived at was of utmost importance. The authors point out that this decision was in accord with an earlier Wisconsin supreme court ruling of 1924. The Wisconsin commission in 1947 favored the "end result" theory and rejected any rate base. This condition was reversed, however, when the state supreme court upheld a lower court decision.

The authors state:

. . . Speaking for the court Justice Hughes stated that in fixing rates for the telephone company the public service commission must file findings of fact embracing the essentials upon which it bases the reasonableness of its rate order and it must determine and set forth the relevant facts and circumstances determinative of the rate base; otherwise its order is arbitrary and unlawful. This opinion marks the end of the "end result" doctrine in the state of Wisconsin and it represents the last specific ruling by our Supreme Court on this subject.

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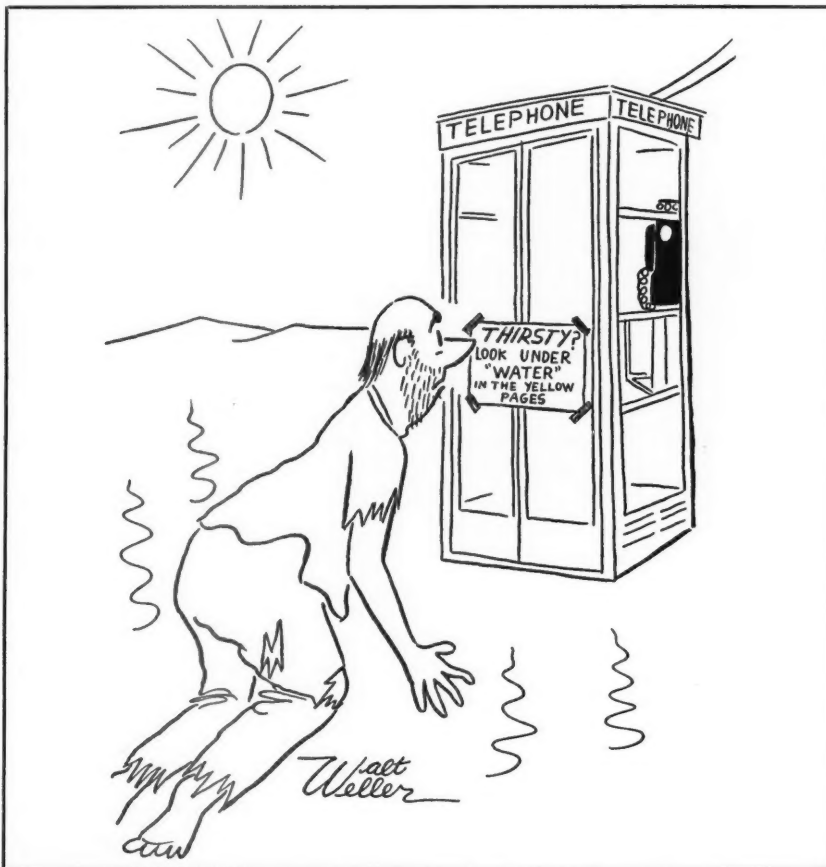
The Vermont court in 1949 followed Wisconsin and stated that the usual and reasonable method for a commission to adopt in fixing rates is to determine a proper rate base and then a proper rate of return.

It is noted by the authors that since the Hope case a number of commissions interpret the federal Constitution to allow a commission to choose its own rate base according to what appears to it to be most fair. The authors state that after the Hope case a great majority of the commissions switched from the reproduction theory to the original investment cost theory as a proper basis for determining the fair rate of return. About a third of the states, of course, still adhere to the theory of recognizing current fair value. Ohio was the pioneer state allowing reproduction theory and calling for consideration of reproduction value in the statutes which regulate the commissions; and the authors conclude that this theory has apparently worked out in that state to the satisfaction of the companies and the customers.

In the post-World War II inflationary period difficulties stemming from the commissions' insistence upon use of the net investment theory have repeatedly been pointed out. Gradually, however, there has been a fairly notable shift to the reproduction cost, especially true in recent years. In 1957 Maine repealed its statute requiring consideration of reproduction cost, while Iowa and Missouri have during the past two years shifted to recognition of value, bringing the total using this method to 16 states.

It is the contention of the authors that

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there is much validity to the claim that reproduction value is a more difficult basis requiring greater training as well as greater effort upon the part of commission staffs. They point out, however, that if commissions are to give proper considerations to cost of money, need of working capital, etc., the staff is still going to have to engage in extensive study. It is further felt that the courts have erred in abdicating their review of commission rulings in matters other than those associated with confiscation of property. They state the basis of this criticism is the inherent legal

and constitutional problem involved in public utility regulation.

In conclusion the authors note that the reproduction theory of determination of rate base and rate of return, based upon present-day actual value, is the best approach to the problem of meeting expansion demands, coping with progressive inflation, higher money costs, attrition, etc.

Reprints of this article can be obtained from the *Marquette Law Review* (Vol. 42, No. 3), Marquette University, Marquette, Wisconsin.

—C. M. B.

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Use of Coal, Gas, and Oil in Electric Generation 1946 to 1958

THE comparative use of fuels for the generation of electricity from 1946 through 1958 is graphically presented by the National Coal Association in its annual statistical study of trends in electric utility industry experience.

The study by NCA embraces the experience of both privately owned and publicly owned electric utilities which file reports with the Federal Power Commission. Included among the public groups are municipal electric utilities, federal plants, rural electrification co-operatives, power districts, and state power projects.

Since 1946, the report points out, there have been significant changes in the quantities of energy consumed by the electric

utility industry and in utilization of the various energy sources in the production of electric power.

We have reproduced here three tables which reflect the changes between 1946 and 1958 and point up the phenomenal growth of the electric utility industry.

Table A compares coal, oil, gas, nuclear energy, and hydro. Fuels other than coal are reduced to figures equivalent to tonnage of coal consumed for comparative purposes.

While both coal and oil have increased more than 100 per cent since 1946, the per cent of increase in the use of gas for electric generation is almost 350 per cent. This would be expected since the expan-



TABLE A

COMPARISON OF BITUMINOUS COAL, LIGNITE, AND COAL EQUIVALENT TONNAGES OF OTHER ENERGY SOURCES UTILIZED BY THE ELECTRIC UTILITIES IN THE UNITED STATES, 1946 AND 1958

	1946	1958	Per Cent Increase 1958 over 1946
Bituminous Coal	67,623	151,756	124.4
Lignite	1,120	1,183	5.6
Total Coal	68,743	152,939	122.5
Anthracite	2,411	1,840	-23.7
<i>Fuel Oil</i>			
Steam	7,689	17,472	127.2
Internal Combustion	1,394	877	37.1
Total Oil	9,083	18,349	102.0
<i>Gas</i>			
Steam	12,011	53,460	345.1
Internal Combustion	128	970	657.8
Total Gas	12,139	54,430	348.4
Nuclear Energy	—	75	—
Miscellaneous	140	80	-42.9
Total Fuels	92,516	227,713	146.1
Hydro	50,572	63,749	26.1
Total Fuels and Hydro	143,088	291,462	103.7

Source, Tables 2 and 3 of study

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sion of gas pipelines in a big way dates from right after World War II.

Table B compares the amount of electric energy generated by each fuel and what per cent of the total each fuel has contributed to the complete power picture, in terms of kilowatt-hours in 1946 and in 1958.

Reports NCA:

While coal still accounts for more than two-thirds of the kilowatt-hours generated from fuels, this is somewhat less proportionately than it was at the end of the war, testifying to the growth of competition from oil and gas, especially the latter. Oil's participation in 1958 was actually a little less percentagewise than in 1946. . . .

Approaching this matter of comparison from the viewpoint of kilowatt-hour output assignable to each fuel, in 1958 coal produced 232 billion kilowatt-hours more than in 1946, natural gas increased by 101 billion kilowatt-hours, oil showed an increase of 26 billion kilowatt-hours, and other fuels

showed spotty and less important changes. In other words, coal's 13-year increase in the utility market, expressed in kilowatt-hours, was almost two and one-third times that of gas and more than eight and a half times that of oil.

IN Table C, the NCA study shows the average costs of generation of power by each fuel for 1952 and 1958, both on a physical unit basis and per million Btu's. With either approach, coal is shown to maintain its cost level throughout the period, with oil and gas, especially the latter, showing substantial rises. Said NCA:

. . . Costs are "as consumed," that is at the boilers, the most realistic point to evaluate relative costs to the utilities of using each fuel. On the basis of physical units, during the seven years the cost of coal actually declined, from \$6.61 to \$6.58 per ton, a decrease of one-half of one per cent. Oil costs and those for gas rose by 19.1 per cent and 43.7 per cent, respectively.



TABLE B

COMPARISON OF ELECTRIC ENERGY GENERATED BY EACH FUEL AND PER CENT OF ENERGY GENERATED BY EACH FUEL OF THE TOTAL GENERATED BY ALL FUELS IN THE UNITED STATES, 1946 AND 1958

	1946		1958	
	Millions Of Kwhr. Generated	Per Cent Of Total	Millions Of Kwhr. Generated	Per Cent Of Total
Bituminous Coal	107,141.3	74.01	339,474.0	67.24
Lignite	774.0	0.53	843.4	0.17
Anthracite	3,738.4	2.58	4,048.3	0.80
Fuel Oil				
Steam	11,921.1	8.23	38,442.4	7.61
Internal Combustion	2,160.8	1.49	1,929.1	0.38
Gas				
Steam	18,621.1	12.86	117,624.4	23.30
Internal Combustion	198.8	0.14	2,134.9	0.42
Nuclear Energy	—	—	164.7	0.03
Miscellaneous	216.4	0.15	175.0	0.03
Total Fuel-burning Plants ..	144,771.8	100.0	504,836.3	100.0

Note: Totals may not add due to rounding.
Source, Tables 2 and 4 of study

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TABLE C
COMPARISON OF STEAM-ELECTRIC UTILITY PLANT FUEL
COSTS PER UNIT, AND PER MILLION BTU IN THE
UNITED STATES, 1952 AND 1958

	<i>Cost Per Unit</i>			<i>Cost Per Million</i>		
	<i>Coal Ton (Dollars)</i>	<i>Oil Bar- rel (Dollars)</i>	<i>Gas Mcf (Cents)</i>	<i>Coal Btu (In Cents)</i>	<i>Oil Btu (In Cents)</i>	<i>Gas Btu (In Cents)</i>
1952	6.61	2.09	15.1	27.3	33.1	14.5
1958	6.58	2.49	21.7	27.4	39.6	20.7
Per Cent Increase in Cost 1958 over 1952	-0.5	19.1	43.7	0.4	19.6	42.8

Source, Table 5 of study



Table C, NCA pointed out, indicates a definite upward trend in the cost of oil and natural gas in the generation of electric power. If these trends continue, "even in those areas where low-priced interruptible gas is thrown on the market," areas which incidentally themselves are largely responsible for producing these national averages, the advantages of these fuels over coal costwise should be reduced.

In summation of its statistical findings, NCA had this to say:

... Coal continues to be a major source of energy [for electric generation], though penetration of this market by natural gas and in some areas also by

oil is a relatively recent development. On a national average, in 1946, coal's share of the generation was roughly six times that of natural gas; but by 1958 this had fallen to three times. Meanwhile, coal-fired utility plants more than tripled their generation. . . .

THE association for the coal interests said that while it would have to have considerably more experience with the use of both gas and oil before their full effect upon the national fuels situation could be assessed with greater accuracy, the trends in efficiency, the fuel rate, and in costs, indicate coal should improve competitively in the next ten years.

The Public Utility Employee and Politics

At a meeting in January of the accounting section of the Oklahoma Utilities Association, Howard S. Cowan, director of public affairs for the Public Service Company of Oklahoma, had some interesting comments to make on the rôle public utility employees might play in politics.

First, he pointed out that a utility was different from other types of businesses in a number of ways. A utility is a monopoly, he said, and sells mainly a service,

rates for which are regulated. The public expects a lot from a utility, Cowan stated. Because it is a big company, customers traditionally expect that it will provide leadership in community activities. He said that too many people today are suspicious of business success and big business:

For many years now, through the shrewd and unceasing efforts of a highly vocal minority seeking political

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power, there has been developed in this country, and abroad, a climate of public opinion in which business success is looked upon with suspicion.

Big business has been viewed almost automatically as the greedy octopus fattening on ill-gotten gains surreptitiously snatched from an unsuspecting public.

It is still regarded as popular by some politicians to jump on the utility companies. . . .

They would like to "emancipate the common man from the strangling yoke which big business has riveted about his defenseless neck."

These political snipings can be very persuasive, he said, especially in times of economic stress, even though unsupported by facts and logic. In recent years, Cowan stated, both the gas and electric and telephone companies have been trying to make their services welcomed and sought after by those they serve. It takes people to change other people's opinions, he pointed out. Politically minded employees of utilities are those who must work to influence the public on an individual basis. This type of politics, of course, Cowan emphasized, is far removed from the usual ward, courthouse, or state or national level. But it is the people, he said, who make the tax laws, appoint bureaucrats, make regulatory laws, etc.

HE said it is most important for many reasons for utility employees to participate in politics at all levels of government. He quoted from Ralph Cordiner, chairman of General Electric:

The problem of political attack cannot be solved simply by supplying good service at good rates, but providing good jobs, by paying good dividends,

and increasing the value of stocks, by collecting and paying big taxes, by obeying the law, and by giving away to charity a lot of money some people seem to think we stole.

Those very businesses which have been most successful in doing the most for the largest number of individual citizens are the very ones that have been singled out, over the years, as the prime targets for political attack, congressional investigation, union invective, and all the other forms of publicly discrediting their intentions and achievements. . . .

Utility employees, Cowan declared, must be politically effective to protect their own personal liberties and to defend the industry which provides their livelihood. He spelled out some of the things they can do besides the obvious thing of registering as a member of the political party of their choice. He stated:

Make it a habit to vote regularly in the primaries. . . .

Know the structure under which your party operates in your state. . . . Acquaint yourself with your party's officers at the precinct, county, and state level.

Be active in your party. . . . Contribute financially to your party.

COWAN pointed out that contributing funds, however small, to the party of your choice whets your appetite for politics. Small amounts add up to sizable contributions if made by many people.

The utility as a corporation may not enter the political arena. But Cowan said there are "no hammer locks on you or me, on our fellow employees and the members of our families."



The March of Events

Electric Auto Introduced

THE debut of a new electric auto, designed for electric utility company use, was announced in Boca Raton, Florida, at the meeting of the Southeastern Electric Exchange in March. Admittedly experimental, there nevertheless have been 76 tentative orders placed for the "Henney Kilowatt," at a cost of \$3,500 each.

Sponsoring the new car were B. L. England, chairman of the board of the Atlantic City Electric Company, and C. Russell Feldman, chairman of the board and president of Eureka William Corporation, parent company of the Henney Motor Company, which will make the car.

The "Kilowatt" car attains a top speed

of 35 miles an hour and averages about 50 miles before it requires recharging. Operational costs for electricity are estimated at one cent a mile or about \$50 a year for the average user. At present batteries must be replaced about every two years.

But the motors of the electric car have a life expectancy of thirty years, require virtually no repair or service. Distance range before recharging—which may be done overnight from any electric outlet—is enough for the average commuter or householder who uses the car mostly for shopping. But the present high cost would act as a deterrent to the general public who might consider such a car for its second vehicle.

Alaska

Alaska's Hydro Potential Great

THE Department of Interior recently reported that Alaska has more than 13 million kilowatts of prime power potential at 168 possible sites.

This would make the forty-ninth state an ideal location for aluminum and other electro process industries which use huge amounts of power.

Senator Kerr (Democrat, Oklahoma), chairman of a Select Senate Committee

on National Water Resources, commented on the report to the effect that Alaska offered a ready-made opportunity to build multimillion-kilowatt plants rivaling those under way and planned in the Soviet Union.

To develop power in Alaska, however, will require literally billions of dollars of capital, some private, but largely supplied by the federal government on traditional repayment bases.

THE MARCH OF EVENTS

District of Columbia

PUC against U. S. Transit Benefit

THE District of Columbia Public Utilities Commission wants to make sure that the federal government does not become the beneficiary of present transit tax exemptions nor of any subsidies that might be granted in the future. As it now stands, under D. C. Transit System's franchise, out of every dollar of revenue the District income tax gets 5 cents and the federal income tax is 49.4 cents. This

leaves only 45.6 cents for net operating income.

A bill could be written which would allow D. C. Transit to get a refund of the portion of federal income tax that involved specified subsidies or tax exemptions.

The new approach would apply to the existing taxes on motor vehicle fuel and real estate and also to subsidies for which the commissioners plan to ask stand-by powers.

Indiana

City Water Plant Defeated

A VICTORY for free enterprise was seen recently in the outcome of a vote over whether the city administration of Gary should acquire the Gary-Hobart Water Company. By a margin of 2½ to 1, the voters opposed condemnation of the

private utility. The AFL-CIO approved the condemnation, but the rank and file of union members rejected it, according to a company spokesman. The company claimed also that the vote was "a repudiation of government ownership."

The mayor of Gary had criticized the company's rates.

Kentucky

Gas Rate Boost Asked

COLUMBIA GAS OF KENTUCKY has asked the public service commission to approve a gas rate increase totaling \$1,019,000 annually. If the higher rates are granted they would apply to the Lexington and Ashland districts served by the company and would become effective April 5th.

The increases asked were to offset the higher costs of wholesale gas that Columbia must pay to its suppliers.

Residential consumers under the new rates would have to pay an additional 6.25 cents per thousand cubic feet of gas in the Lexington district and 5.76 cents per thousand cubic feet in the Ashland district. About 75 cents a month on the

average would be added to customer bills.

The rate increases of two wholesale suppliers of Columbia Gas, Kentucky Gas Transmission and United Fuel Gas Company, are still spending before the FPC.

Municipal Utility Bill Killed

A MEASURE which was designed to help Kentucky cities establish municipally owned utilities has been killed in the house. It was promoted by the so-called Kentucky Association for Low Cost Power, all but one of the state's REA co-ops, and a number of city officials. The purpose was to make Kentucky cities eligible to receive wholesale power from TVA and four other sources of public power.

The legislation would have changed

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condemnation procedures by cities seeking to buy local private utility companies. Privately owned utility companies in Kentucky opposed the measure for they re-

garded it as a threat to several franchised operations in a number of west Kentucky towns that have expressed an interest in receiving power from TVA.

Michigan

Phone Rates Increased

THE state public service commission recently approved a new telephone rate schedule for the Michigan Bell Telephone Company which has added 5 to 10 cents a month to subscribers' monthly phone bills. In addition, short toll calls are now 5 cents more on the average and there is a new 10-cent charge for collect calls. The rate increase given Michigan Bell will yield \$4 million a year, but much of it will go out in taxes.

Nearly two million customers are af-

fected by the new rates. The company wanted to raise more than half of the increase through local rate hikes. But the commission suggested a formula under which \$1,670,694 would come from increases in basic exchange rates and local service while increases in long-distance tolls within the state plus new charges for collect calls would provide \$945,607. Remainder of the total was provided by a regrouping of 18 exchanges into higher rate zones and other miscellaneous special services.

Minnesota

Million Kilowatt Plant Planned

THE Northern States Power Company is planning to construct a one million kilowatt steam-powered generating plant at Newport, Minnesota, on the Mississippi river at a cost of between \$170 million and \$180 million, according to company spokesmen.

The site is 286 acres just south of St.

Paul. However, construction of the plant probably will not begin for another four to five years.

Northern States now has a generating capability of 1,693,915 kilowatts and by 1969 expects to need an additional 1.3 million kilowatts. Presently being constructed are facilities with power generating capacity of 240,000 kilowatts.

Washington

Regrets Nez Perce Filing

THE chairman of the board of Pacific Northwest Power Company, Kinsey M. Robinson, said it was unfortunate that the nine Washington public utility districts had filed an application to build a dam at Nez Perce. He branded it as an inferior project fraught with serious fish problems. He said the application of the PUD's on the eve of hearings for consideration of PNP's application to build

the High Mountain Sheep dam, could only stir up controversy again.

Robinson said his company had selected the High Mountain Sheep site after many months of extensive and costly engineering studies. He termed the project the best all-around multipurpose project in the Middle Snake and said it offered the region power and flood control while still protecting the vital fishery resources of the Salmon river.



Progress of Regulation

Trends and Topics

Franchise or Certificate Expense as Part of Rate Base

A PUBLIC utility company incurs expense in obtaining a franchise, a certificate of convenience and necessity, or a permit from a municipality or some public authority aside from any amount which it may have to pay, for example, to a city as compensation for granting the franchise. The question whether such expenses should be allowed as overheads in a rate base determination is somewhat different from the question whether the value of a franchise, whether determined by appraisal or by ascertaining the cost, should be included. This latter question was discussed in PUBLIC UTILITIES FORTNIGHTLY, February 4, 1960, at page 201. These overhead expenses may include such items as legal fees for drafting and presenting a franchise to authorities, surety bonds, and incidental expenses.

Capitalization of Expenses Disapproved

The Wyoming commission recently disallowed as part of the rate base of a gas company an item designated as "Franchise and Consent," which represented expense incurred in obtaining a certificate of public convenience and necessity from the commission authorizing the company to construct and operate plant facilities. This expense included attorney fees, travel expense, filing fees, etc. The commission, in excluding these expenses, followed the same reasoning as in the Northern Utilities Company case (31 PUR3d 24), when it refused to allow the value assigned to a franchise.

The commission in that case had taken the position that the amount actually and necessarily expended in obtaining a franchise may be recouped through amortization charged to operating expense over a reasonable period of time. This was in harmony with an earlier decision in the Plains Pipe Line Company case (96 PUR NS 587), when it ruled that the company should be permitted to amortize organization expense and should not be allowed to capitalize such expenses which are being amortized. Following and confirming these rulings, said the commission, it concluded that the amount of "fran-

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chise expenditure" should be excluded, that depreciation charges associated with the item should be excluded from depreciation reserve, and that the undepreciated balance of the expenditure should be amortized (32 PUR3d 60).

Allowance in Rate Base

Some commissions, however, have included such expenses in the rate base as an overhead. The Idaho commission included the expense of obtaining a franchise, involving legal fees for drafting and presenting it to the authorities and other incidental costs (PUR1926E 728). The actual cost of fees paid by a water company for professional services in connection with filing of applications and hearings before a water control commission for an extension of property, and application to a municipal board for amendment of a building zone resolution to permit standpipes, was included by the New York commission, although no allowance was made for franchises as such (13 PUR NS 405).

Once the Missouri commission had before it the question whether the expense of a city election incurred by an electric light and power company in obtaining its franchise should be included under a statute which forbids the capitalization of any franchise beyond the amount actually paid to the state or to any political subdivision thereof. The commission decided that this expense was allowable (PUR1915A 956).

The California commission said that attorney's fees, surety bonds, and railroad fare, being expenses in connection with the acquisition of a franchise of a gas company, should be considered as organization expenses (PUR1930C 182). The commission was passing on an application for authority to purchase property and to issue securities. It treated as "cost of the franchise" only amounts paid to a political subdivision.

No Theoretical Allowance

The New York commission allowed a telephone company, comprising several consolidated properties, only the cost of securing necessary franchises and one general certificate of convenience and necessity (13 PUR NS 134). The company did not require franchises in all localities served.

The Montana commission, in determining the rate base of a company operating gas, electric, and street railway departments, refused to allow for preliminary organization, including franchise expense, an amount which would be incurred for each department as if the department were owned and operated by a single utility. All of the plants had been constructed at approximately the same time, and the franchises were procured at the same time. No allowance was made for the cost of procuring a certificate of convenience and necessity where the law at the time of organization of the utility did not require such a certificate and no certificate was in fact procured (PUR1920D 668). The commission, in later cases, allowed expenditures in connection with securing a franchise (PUR1924B 705), but made no allowance for the expense of securing a certificate which was unnecessary (PUR1928E 396).

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Review of Current Cases

Vital Importance of Community Funds Justifies Charitable Contributions by Utilities

THE current trend of decisions recognizing utility contributions as proper operating expenses, says the Illinois commission, is not only in keeping with sound thinking as to corporate responsibility but is also realistic in terms of the advantages thereby derived by the contributing utility. Changed conditions in our economic life have been brought about by a change of philosophy on corporation donations, and there are different benefits of varying character flowing to a utility from proper support of worthy philanthropic objectives.

Legal Right to Make Donation

This decision by the Illinois commission resulted from a complaint against contributions by the Illinois Bell Telephone Company to the Community Fund-Red Cross Crusade of Mercy campaign. Complaint had also been made against the loaning of corporate employees to such an organization. The complaint said that the company was overcharging its customers by the \$290,000 contribution plus amounts paid as wages to executives and employees who were not performing functions of the utility operations.

This was not a rate case, so the specific allowance and the services of two employees as an expense item in determining rates for telephone service were not before the commission. The commission was deciding that these contributions were not unlawful per se and the contributions, with the services of employees for a few months, were not excessive to the extent of requiring an investigation of rates.

From the early view that philanthropic contributions were improper and ultra

vires, the common law, said the commission, has come to recognize such contributions not only as legitimate expenses of business but as the discharge of an obligation. Legislatures of more than forty states have authorized corporate donations for philanthropic purposes. Included is the state of Illinois, which permits a corporation to make donations "for the public welfare or for charitable, scientific, religious, or educational purposes." In the light of the above, it seemed to the commission that no objection might properly be made to the support by business corporations of worthy philanthropic objectives.

Changing Views on Utility Contributions

The commission was aware that in recent years some regulatory tribunals had taken positions directly contrary to earlier determinations and now permitted utilities to deduct contributions for rate-making purposes. Reference was made to an Ohio decision (82 PUR NS 341), an Arkansas decision (2 PUR3d 1), a Wyoming decision (27 PUR3d 259), a Virginia decision (9 PUR3d 225), and a New Hampshire decision (27 PUR3d 113). The commission said that even prior to the trend evidenced in these cases, the supreme court of Illinois, in *Peoples Gas Light & Coke Co. v. Slattery* (31 PUR NS 193), said that under certain circumstances donations constituted proper operating expenses. The court in that case said that the rule seemed to be well settled that donations "are not proper operating expenses unless it is shown that they will be of some peculiar benefit to the company or its patrons."

The evidence introduced in this case

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satisfied the commission that there was a showing of benefit to the company. There was evidence that the company derived benefits in creating good will, with the attendant reduction of customer complaints in strengthening the economic health of the community and in minimizing possible damage to the company's physical plant and equipment. It was also noted that discontinuance of support by the utility might result in other corporations doing likewise.

Effect of Contributions on Rates

Although the commission was not passing on the question of an allowance in a rate case, it noted that the total contribu-

tion, including a few months' service of the two employees, would amount to \$310,000. The record showed that the company has approximately two million telephones in the Chicago area, so that the rate on each telephone is affected by approximately 16 cents per year without considering the income tax effect. When the latter is taken into account, since the contributions are deductible on figuring federal income taxes, the actual effect on rates is about 8 cents annually per telephone, or less than one cent a month. Monthly rates, said the commission, are "not susceptible of fractional cent adjustments." *Vrtjak v. Illinois Bell Teleph. Co. No. 46221, December 22, 1959.*



Niagara Power Project Finally Wins Right to Take Tuscarora Indian Lands

THE U. S. Supreme Court ruled that the New York Power Authority may take lands of the Tuscarora Indian nation for the Niagara power project upon payment of just compensation, under a license issued by the Federal Power Commission at the express direction of Congress.

The New York Power Authority designed a \$720 million project to utilize all of the Niagara waters available to the United States under a treaty with Canada. Plans provide for an installed capacity of 2,190,000 kilowatts, of which 1.8 million kilowatts will be dependable power for seventeen hours a day, requiring a storage reservoir of 60,000 acre-feet capacity covering about 2,800 acres. For this reservoir the Power Authority proposed to appropriate 1,383 acres of one relatively undeveloped tract of more than 4,000 acres belonging to the Tuscaroras, purchased by them in fee simple with the proceeds from the sale of their lands in North Carolina. It appears that the area

which will be taken has finally been fixed at about 550 acres.

"Reservation" Status Urged

The Tuscaroras objected to the taking of their lands on the ground that the Power Authority lacked authority to acquire them. On appeal from a commission order granting a license, a federal court of appeals sustained the Tuscaroras' contention that the portion of their lands sought to be taken was part of a "reservation," within the meaning of §§ 3(2) and 4(e) of the Federal Power Act, and, therefore, could not lawfully be taken for reservoir purposes in the absence of a finding by the commission "that the license will not interfere or be inconsistent with the purpose for which such reservation was created or acquired." But the commission was unable to make such a finding even though other lands contiguous to the reservation could be acquired by the Indians. The appeals court, therefore, ruled that the Power Authority

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was without power to condemn the Indian lands.

Lands Are Not "Reservation"

The high court posed two questions upon which the case turned: (1) Whether the Tuscarora lands sought to be acquired were part of a "reservation," within the meaning of the Federal Power Act; and (2) if not, whether, notwithstanding 25 USCA § 177 restricting the alienation of Indian lands, the lands may be condemned by the licensee under the eminent domain powers conferred by § 21 of the Federal Power Act.

It was held that the lands do not constitute a part of a "reservation," within the meaning of § 4(e) of the act. Congress intended the term "reservations," wherever used in the act, to embrace only lands and interests in lands owned by the United States. Nor does the national "paternal interest" in the welfare and protection of Indians constitute the "interest in lands owned by the United States" required by § 3(2) as an element of "reservations."

"Inasmuch as the lands involved are owned in fee simple by the Tuscarora Indian nation and no 'interest' in them is 'owned by the United States,'" said the court, "we hold that they are not within a 'reservation' as that term is defined and used in the Federal Power Act, and that a commission finding under § 4(e) of that act 'that the license will not interfere or be inconsistent with the purpose for which such reservation was created or acquired' is not necessary to the issuance of a license embracing the Tuscarora lands needed for the project."

Condemnation of Lands Owned Outright

It was urged by the Power Authority and the commission that § 21 of the Federal Power Act, is a broad general statute

authorizing condemnation of "the lands or property of others necessary to the construction, maintenance, or operation of any" licensed project, and that lands owned by Indians in fee simple, not being excluded, may be taken by a licensee. The Tuscaroras, on the other hand, argued that § 21, being only a general act, does not apply to Indians or their lands.

The court indicated that the Federal Power Act neither excludes nor overlooks Indians or their lands, but includes lands owned or occupied by any person, including Indians. It applies to the lands owned in fee simple by the Tuscaroras.

The Tuscaroras next contended that, even so, their lands may not be taken for public use without the express consent of Congress, because of the provisions of 25 USCA § 177. That section provides that no purchase or conveyance of Indian lands shall be valid unless it be made by treaty or convention entered into pursuant to the Constitution.

The purpose of the statute, the court pointed out, is to prevent unfair or improvident disposition of lands by Indians to other parties without congressional consent. There is no such requirement, however, with respect to condemnations by the United States or its licensees. Section 177 is not applicable to the sovereign or to its licensees to whom Congress has delegated eminent domain powers under § 21 of the Federal Power Act. A general statute imposing restrictions does not impose them upon the government itself without a clear expression or implication to that effect.

Thus, said the court, by the broad general terms of § 21, licensees have power to take Indian lands, as well as those of all other citizens, when needed for licensed project, upon payment of just compensation. And the granting of this power to the Power Authority to take these lands

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of the Tuscaroras does not violate any treaty or other contractual agreement of the United States with the Tuscaroras for the reason that there is none, the court declared.

Dissenters Would Save Reservation

Mr. Justice Black, joined by the Chief Justice and Mr. Justice Douglas, dissenting, expressed the opinion that the Federal Power Act positively prohibits the taking of the Tuscaroras' lands, that such taking violates the nation's long-established policy of preserving Indian reser-

vations for tribal use, and that it is a breach of Indian treaties recognized by Congress since at least 1794. The justice declared that the lands are a "reservation," within the plain meaning of the statute, and noted that they have been regarded as a reservation for more than 150 years. As such, it was asserted, § 4(e) forbids the taking of the lands without a finding that such taking will not be inconsistent with the purpose of the reservation. *Federal Power Commission et al. v. Tuscarora Indian Nation*, Nos. 63, 66, March 7, 1960.



Delinquent Interest Not Part of Cost of Financing

THE Colorado commission found itself with a situation that defied precedent when a water company filed an application for emergency rate relief, alleging that it had used depreciation accruals and available cash on hand to build necessary plant additions, signing notes for delinquent interest due its parent. The parent was an eleemosynary institution, the sole stockholder of the subsidiary water company, and owner of all the notes evidencing the indebtedness of the company. Debit ratio was more than 100 per cent.

The commission recognized, at the outset, that if it allowed the company to earn enough to pay interest charges, including delinquent interest payments, it would be allowing a guaranteed rate of return, which it could not do.

Zone of Reasonableness

A zone of reasonableness in a case such as this, pointed out the commission, is not so much what the rate of return would be as far as confiscation or unreasonableness is concerned, but what is a fair rate to both the company and the customer in the light of all the conditions with which the company is faced.

The total amount of notes signed by the water company for delinquent interest amounted to \$190,600.44. The commission did not agree with counsel for the company that such delinquent interest was a part of the company's cost of financing. Assuming the company had used available cash toward the payment of interest, rather than investing it in plant, the commission determined that the company would have had to borrow \$108,529.56, exclusive of contributions in aid of construction.

Hypothetical Amount

For rate-making purposes, the commission assumed that the company had, in effect, borrowed that amount of money for plant additions and included, as a part of the capital structure, that amount. As to the difference between the amount the company would have had to borrow and the amount of delinquent interest, the commission could find no reason why customers should be held liable for such payment.

The commission pointed out that the burden of seeking timely rate relief is upon the utility, and that the company

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should have applied sooner for a rate increase rather than let the delinquent interest accumulate. The fact that the company had, in the past, not used its depreciation accruals for retirement of debt did not mean that it could continue in the future to use such moneys for additions to plant and expect in return an additional

amount to retire loans and also to build plants. Customers, through rates, could not be expected to furnish all the capital for normal additions to plant. The commission could not guarantee a rate of return. *Re South Suburban Water Co. Application No. 17128, Decision No. 53632, January 8, 1960.*



Proposed Minimum and Service Termination Charges Reduced in Gas Rate Proceeding

IN a rate proceeding before the Florida commission, the Houston Corporation, furnishing manufactured gas service in Daytona Beach, failed to obtain the full amount of additional revenue sought, even though total revenues under proposed rates would not be sufficient to meet out-of-pocket costs. The reasonableness of minimum and service termination charges was put in question.

The company proposed a minimum charge of \$3, increased from 50 cents. The commission could not justify this increase upon weighing the resulting benefits to the company against the increased burden it would impose upon consumers. The fundamental principle governing the design of a minimum charge, it was noted, is the recovery of direct customer costs, with an increment to cover commodity costs. The commission thought a minimum charge of \$1.50 would be reasonable.

Also proposed was a tariff provision for gas service for a minimum of one year, with a charge of \$5 where service is termi-

nated during the first six months, and a charge of \$2.50 for a termination during the next six months.

One witness pointed out that many tourists in Daytona Beach take service for less than six months.

The commission agreed with the concept that charges which are generally directly allocable to a customer should be assessed against such customer. Any other approach would be discriminatory in some measure in that the burden of providing service to the customer would be shifted to other customers receiving no benefit from the service. The commission felt that the charge should not be based on length of service. Such a basis, it pointed out, is less realistic than a method based on revenue recovered, because some customers make greater use of service than others. A termination charge of \$2 was authorized, to be applied only when the customer's total bill is less than \$15. *Re Houston Corp. Docket No. 5837-GU, Order No. 2869, February 5, 1960.*



Depreciation Accrual Rate for "Cradle-to-grave" Account

THE Ohio commission, in granting a telephone company a rate increase which would produce a return of 6.25 per cent on the reproduction cost rate base, was called upon to fix the depreciation accrual rate for the station connections

account. It was a new account resulting from the installation of so-called "cradle-to-grave" accounting. Since there was little experience with the service lives of the types of property included in this account, the proper accrual rate could not

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be estimated with the same degree of accuracy and objectivity as is possible with other types of depreciable property.

The commission's engineers had recommended that the accrual rate assigned be not less than 8 per cent. The company had proposed a rate of 12 per cent. Based

upon the record, the commission set the rate at 11 per cent.

The commission emphasized that its finding was for the purpose of the case only and subject to revision in future cases. *Re Ohio Central Teleph. Corp. No. 27,917, January 29, 1960.*



Overdesign of Gas Pipeline Excluded from Rate Base and Suppliers' Profit Rejected as Measure of Fair Rates

THE North Dakota supreme court sustained the commission in excluding excess gas pipeline capacity from the rate base of Montana-Dakota Utilities Company. The company constructed a 12-inch pipeline from Tioga to Minot, although an 8-inch line would be adequate to serve the line's present requirements. The president of the company explained that the extra 4 inches were considered necessary to supply future development beyond Minot in eastern North Dakota.

The company also contended that the additional investment of about \$750,000 for the construction of the larger pipeline should be included in the rate base for the reason that the line itself, before extension, would provide some storage cushion against fluctuations in the supply of gas or short-term breakdown. The excess capacity would guarantee service to Minot.

The commission recognized that it may be a prudent investment to provide for possible future expansion into new communities to the east if sufficient gas should later become available. But present patrons should not be burdened in order to provide for possible needs of other communities some time in the future. Nor should present patrons be required to pay for the overdesign merely because of the incidental storage factor.

Improper Conditioning of Certificates

The company had requested the com-

mission to declare that no certificates were necessary to construct and operate gas transmission lines and distribution facilities. In the alternative, if certificates were required, the commission was asked to issue them and approve proposed rates. The commission found that certificates were required and authorized them to be issued.

It conditioned their issuance, however, on a requirement that the company file an agreement to comply with an order establishing lower rates.

The court held that the commission had no statutory authority to impose this condition, and since it was outside the scope of the administrative powers, it was void. Stripped of the void condition, the commission's certificate order, therefore, left moot and academic the question of whether certificates were required.

Suppliers' Profits Not Rate Issue

The company challenged the commission's right to investigate the profits of contract suppliers of residue gas where the contracts between Montana-Dakota and the suppliers were negotiated at arm's length and where the suppliers were neither owned nor controlled by Montana-Dakota or by any affiliate having common controlling stockholders. Appropriate authority was claimed by the commission, by virtue of a statute requiring the determination of proper rates, to dis-

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allow prices in excess of fair market value paid for any commodity by the utility. The commission maintained that the contract price agreed to be paid for firm gas was in excess of the fair market value by 7 cents per Mcf. This was one of the major factors in the commission's determination that rates proposed by the company for certain new developments were unreasonable.

In arriving at the conclusion that the firm price was excessive, the commission examined officers, employees, and records of the suppliers. It found that in processing wet gas for the production of residue gas, a number of salable by-products were produced. Substantial income from these by-products, plus anticipated income from contract sales of firm residue gas, would result in excessive profits to the suppliers, according to the commission's view. Therefore, it was contended, Montana-

Dakota had agreed to a firm price for residue gas in excess of fair market value.

The court was not aware of any decided case which recognized profit to the seller as the basis for a determination of market value. On such a basis, the commission could have found that the residue gas had only nominal value, or no value at all, because the suppliers were making a reasonable profit on by-products. On the other hand, applying parallel reasoning, the value of the residue gas might be fixed at a level considerably in excess of the value arrived at by the normal methods of price determination in commerce, if the supplier's management happened to be poor and its operating methods inefficient. The court rejected the use of the suppliers' project as a basis for determining fair market value. *North Dakota Pub. Service Commission v. Montana-Dakota Utilities Co.* 100 NW2d 140.



Conjunctional Billing and Intercommunicating Buildings Riders Frozen

THE New York commission has finally resolved its May 26, 1959, order (28 PUR3d 243) regarding conjunctional billings and intercommunicating buildings riders contained in rate schedules for electric, gas, and steam service. In the prior order, the commission had found that such practices, which permitted combined billing where buildings or parts of buildings under common ownership or leasehold met specified requirements as to proximity, use, or physical connection, were unduly discriminatory and unjustly preferential.

There had been testimony as to competitive conditions which prompted creation of the riders, the disappearance of such conditions in recent years, and company promotion of business under the riders despite their contemplated elimination. In view of the increase in charges that would

result from cancellation, and the rewiring expense that rider customers would incur in order to avoid or curtail increased charges, the commission had held that a reasonable time should be given to rider customers to make rewiring or other changes they deemed desirable.

Quest Terminated

The commission had devoted the intervening period to careful analysis of various alternative means by which the number and scope of the existing conjunctional billing and intercommunicating building rider accounts might be fairly reduced. However, the commission had concluded that the ramifications of sudden cessation of existing conjunctional billing privileges, in whole or in major parts, would be so complex as to be indetermi-

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nable with completeness and accuracy, and so widespread and drastic under most, if not all, alternatives as to prompt it to terminate its quest for fair and reasonable means of immediately limiting the number and scope of some or all of the present accounts.

Abuse of Riders

The commission was well aware of various instances of abuse of the privilege which had developed in the administration of the riders over the course of time. Typical was the combination of meter readings in separate buildings, commonly owned or leased but not common in any other respect, integrated only in the sense that one of them was separated from another by no more than 100 feet or the width of a city street.

Nevertheless, summary rectification of such and other ingrained practices was difficult if not impossible to accomplish fairly and reasonably, the commission pointed out. It hoped that the passage of time would serve to contract the scope and extent of the present conjunctural billing practices as title transfers, lease terminations, building destructions, etc., disrupt the present combinations.

In effect, therefore, the import of the latest commission order precludes further extension of the conjunctural billing practice beyond that extant on the cutoff date—a maximum “freeze” of the number and scope of such customers and accounts to those so served and so involved on that date.

Dissenting Opinion

Commissioner Mylott, who had written the majority memorandum in the original decision, voiced a strong dissent in the instant case. He felt that the majority opinion was, in effect, a reversal of its previous order, a reversal that was unprec-

edented, as having the effect of bypassing or ignoring the commission's continuing duty under law.

It was Commissioner Mylott's opinion that the original determination that conjunctural billing was unduly discriminatory and unjustly preferential made a continuation of the practice illegal under the law.

The majority opinion, he said, specifically pointed out some of the discriminatory aspects of the practice, but, nevertheless, concluded, unjustifiably, that the only relief which the commission should grant was to limit the scope of the privilege to customer accounts that were benefiting by the practice prior to the cutoff date.

Fallacious Hope

The majority's opinion that the passage of time would serve to contract the number and scope of conjunctural billing practices was a fallacious hope. What prospect, he said, is there that a number of public housing projects now being served under the riders would be removed from rider billing because of title transfers or building destruction? It was almost certain, he continued, that the number of kilowatt-hours in the revenue bill to customers who would continue to enjoy the conjunctural billing privilege would increase; installation of air-conditioning units in housing projects would greatly increase sales to such projects; greater use of electrical appliances of many types and purposes and, also, better lighting would tend to increase the consumption in residential, commercial, and industrial properties.

Consolidated Edison Company, Commissioner Mylott said, has a statutory and constitutional right to earn a fair return upon its property. It obviously follows that, since the approximately 6,000 rider

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customers (electric, gas, and steam) are concededly receiving an undue preference in rates, the remaining 3,994,000 customers, who are unorganized and individually too small in consumption to employ expert legal and other professional talent to rep-

resent them, will, of necessity, be required to continue to pay more than their fair share of the total bill for service. *Re Consolidated Edison Co. of New York, Inc. Case Nos. 18011-18013, January 12, 1960.*



City Is Denied Stay of Rate Order for Lack of Assurance against Utility Loss

THE Ohio supreme court refused a request by the city of Columbus, pending appeal, to stay an order of the commission authorizing an electric company to increase rates. The city was unwilling to furnish an undertaking, as required by statute, sufficient to pay all damages that the company might suffer by reason of a delay in the enforcement of the order.

Nor would the court require the company to impound the increase collected during the pendency of the appeal or post bond to insure reimbursement to the consumers in the event the increased rates should ultimately be lowered. There is no

statute providing for such a procedure, it was noted, and appeals from commission orders are governed solely by statute.

Presumptively, at least, rates or charges as determined by the commission are fair and reasonable, said the court, and a party who contends otherwise has the burden on appeal of showing that they are unjust, unreasonable, or unlawful. As a branch of the state government, the commission must be assumed to act with fairness and impartiality in all matters coming within its jurisdiction. *City of Columbus v. Ohio Pub. Utilities Commission et al.* 163 NE2d 167.



State Commission Has No Jurisdiction Over Electric Service to Air Base

THE Arkansas supreme court ruled that the state commission has no authority to prevent an electric company from furnishing electric power to the federal government for use over the entire area of an air base. The military installation was established for a national purpose, and neither state laws nor their administrators can interfere with the carrying out of a national purpose, the court pointed out, citing the Supreme Court of the United States in a case involving the California commission and the federal government (23 PUR3d 55).

Before the air base was established, a part of the area which it now covers was

supplied with electricity by an electric co-operative under certificate authority. Arkansas Power & Light Company supplied the rest of the area. After acquiring the area, the government directed both utilities to remove their facilities from the area. The government then contracted with the electric company to furnish power to the entire area. Necessary facilities were constructed by the contracting company and power was supplied at a point outside the area for service through government distribution facilities over the entire air base.

The co-operative thereupon obtained a cease-and-desist order from the state com-

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mission to prevent the company from supplying that part of the base which was formerly allotted to the co-operative. The order would, in effect, force the government to buy electricity from the co-operative, though the Secretary of the Air Force has statutory authority to provide utilities for air bases as he thinks necessary.

State Regulation by Contract

The co-operative sought to invoke a provision of the electric company's contract with the government, entitled "Public Regulation and Change of Rates,"

which recognized the authority of any federal, state, or local commission having jurisdiction. The court interpreted the provision as relating only to rates for service under the contract. But even assuming that the co-operative could invoke a provision of the contract, said the court, the cited provision is not subject to the construction that the government cannot buy electricity from the power company for use on the entire air base.

Three justices dissented. *Arkansas Power & Light Co. v. Arkansas Pub. Service Commission et al.* 330 SW2d 51.



Adequate Existing Service

THE Kentucky court of appeals affirmed a judgment overruling a commission order granting a common carrier certificate. Additional motor carrier authority should not be granted, said the court, merely because of a few isolated instances of unsatisfactory service by the carrier serving the area.

To justify granting additional authority on the grounds that existing service is inadequate, such inadequacy must be due

either to a substantial deficiency of service facilities, beyond what could be supplied by normal improvements in the ordinary course of business, or to indifference, poor management, or disregard of the rights of users of the service, persisting over such a period of time as to exhibit an inability or unwillingness to render adequate or satisfactory service. *Jones v. Webb Transfer Line, Inc. et al.* 328 SW2d 407.



Gas Rates Provide for Exploration and Pipeline Reconditioning And Recognize Need to Attract New Capital

THE Utah commission authorized Mountain Fuel Supply Company to increase gas rates an average of 4.45 per cent in all rate classifications. New rates will produce additional gross revenues of \$1,215,136, with 70 per cent coming from firm service (largely residential customers) and 30 per cent from interruptible service. This revenue apportionment was based on the ratio that the revenues from each class of service bore to total gas revenues. It was considered an appropriate allocation because both classes

had much the same interest in the company's principal need for additional revenues, the development of new gas supplies, and the reconditioning of certain transmission lines.

Rate Base Includes Gas Leaseholds

Based on a test year ending December 31, 1958, the company first asked for a gross revenue increase of \$2.6 million. Later the test year was moved up to July 31, 1959, and, with higher earnings during the period, a gross revenue increase

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of \$1,594,000 was asked. This period was adopted. There was no controversy about the rate base. It included the average net investment in service and plant held for future use, plus average investment in materials and supplies. Cash working capital was also included, based on forty-five days of operating expenses, exclusive of royalties, cost of gas purchased, depreciation, depletion, and taxes.

Plant held for future use consisted largely of leasehold interests in lands held for the purpose of exploration and development of new sources of gas supply. The acquisition of acreage for this purpose was considered to be in the interest of Mountain Fuel's customers.

No separation of utility properties between Utah and Wyoming was attempted in view of the fact that more than 98 per cent of the gas sold by the company through its distribution facilities is consumed in Utah. Operations of the company were considered as a whole, with an equitable determination of Utah's share of the rate increase.

No Allowance for Attrition or Weather

The company sought an allowance in the rate base to offset the effects of attrition on the rate of return. The commission declined to grant any specific allowance in the rate base, or elsewhere, for attrition, noting that expenses for the test period had been adjusted upward to compensate for every known increase claimed, that a marked increase in sales in the future was indicated, that the amount of investment required to produce a unit of revenue had declined generally during the past ten years, and that the company normally included in plant additions spare capacity to provide for future growth.

Nor did the commission think it necessary to adjust test-year revenues to allow

for a warm winter. The winter season of 1958-59 was warmer by 404 degree-days than the average for the past ten years. An adjustment of this nature involves only the gas used for space heating, the commission observed. While it found "considerable merit" in the proposed adjustment, it declined to apply it "because of the vagaries and uncertainty of the weather."

Exploration and Reconditioning Expense

Mountain Fuel has under lease, or otherwise owns or controls, approximately 690,000 acres of land potentially productive of gas. Although it buys most of its gas, the gas it produces is cheaper than purchased gas. At the beginning of 1959, the company owned or had under contract enough gas to serve present customers for about twenty-six years. In order to insure that Mountain Fuel will have an adequate and economic supply in the future, the commission approved a proposed exploration and development program which would increase expenses (before taxes) for the test period by nearly one million dollars.

The commission also approved a proposed program for continued reconditioning of transmission pipelines at an annual cost of \$355,000 (before taxes).

Capital Cost and Rate of Return

Mountain Fuel claimed a rate of return of 6.5 per cent on a net investment rate base. A witness for the state argued that a rate of return of 5.84 per cent would be adequate. At the end of the test year, the capital stock and surplus accounted for nearly 52 per cent of the total capitalization, and long-term debt represented 48 per cent of the total. With the necessity of considerable plant additions to serve new customers, the company will require new capital, probably through equity

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financing. Average interest cost for outstanding debt in 1960 was calculated at 3.81 per cent.

A company witness contended for 10 per cent earnings on equity capital. The state witness, on the other hand, would allow only 7.72 per cent. The main difference in their views issued from conflicting concepts of the application of the earnings-price ratio. The company contended that if the earnings-price ratio is used as a measure of what the common stock investor demands, it must be applied only to market value, and that if it is applied to book equity the ratio first must be adjusted upward in the same degree that market value exceeds book value. The company's average market price exceeded book value by 44 per cent. Under the proposed method an earnings-price ratio of 6.38 per cent would be raised to 9.20 per cent. Applying this figure to book equity and assuming a 50-50 capital structure, the total cost of capital was claimed to be 6.49 per cent.

The state witness, however, would apply the earnings-price ratio to book equity without making any such adjustment. He used an earnings-price ratio of 7.72 per cent, applied directly, and arrived at a

total cost of capital of 5.75 per cent. He took the position that the upward adjustment of the ratio was tantamount to the substitution of market value for original cost in respect to the equity portion of the rate base. The company insisted that acceptance of the state witness' calculation would force a reduction in the current dividend rate.

The commission believed it would not be in the interest of either customer or investor to permit Mountain Fuel's earnings to decline to the point that a reduction in the dividend rate would be necessary. For this reason it found that the suggested rate of return of 5.84 per cent was inadequate. It pointed out, however, that the commission is under no legal obligation to prescribe rates designed to maintain the market price of stock or the dividend rate at any particular levels.

But neither could the commission accept the company's method of finding an allowable return on equity capital. Nevertheless, it determined that a rate of return in the area of 6 to 6.5 per cent would be reasonable. It calculated allowable earnings on the basis of a return of 6.3 per cent. *Re Mountain Fuel Supply Co. Case No. 4797, February 17, 1960.*



Total Passenger Train Discontinuance Denied

THE Maine commission denied the application of the Maine Central Railroad for permission to discontinue all passenger train service. While the commission did not hold that overall profits must forever justify passenger operations conducted at a loss, it pointed to the well-settled rule that a public utility could not demand that each segment of its service be profitable, or that it realize out-of-pocket costs in connection with each segment of its service where public convenience and necessity require the opera-

tion of the service sought to be discontinued.

The record showed that while the decline in patronage had been substantial, there had been a corresponding cutback in the service offered. While some remedial action was warranted, the commission was not convinced that the patronage decline was of sufficient magnitude to warrant complete discontinuance.

Service Deficiencies

The railroad's train performance left

PROGRESS OF REGULATION

much to be desired, said the commission. In many instances coaches were dirty and otherwise uncomfortable. While the commission was not persuaded that such conditions constituted a deliberate attempt to discourage passengers, it was convinced that they did have a very adverse effect upon patronage and had to be given some weight when considering declining patronage.

The actual savings that would have been realized by discontinuing passenger service would approximate \$700,000, the commission found. This fell far short of the fully allocated deficit of \$2.4 million in 1958. Although the commission was convinced that the railroad's equipment was adequate to meet the demands of patronage and that its schedules had been for the most part designed consistent with that demand and the demands of the postal service, it was not convinced that the railroad had done everything that could reasonably be expected of it to encourage passenger traffic. The record showed that only 40 per cent of the trains in question had been operated on time, and that coaches had unswept isles, dirty seats, unclean toilets, lack of drinking facilities.

Continued Public Demand

Despite the demonstrated decline in patronage, the evidence showed there was a substantial public demand for and use of these passenger trains. Many people,

said the commission, still prefer rail service for one reason or another. Notwithstanding the amount of alternative service available, many refuse to fly or drive, and find buses cramped and uncomfortable.

Trains are preferred for reasons of safety, dependability, and comfort.

Modified Service

It appeared to the commission that the railroad could realize much of its estimated savings from total discontinuance under a plan of modified passenger service. The commission approved, for experimental purposes, the operation of some trains as "mail-merchandise" trains in lieu of passenger trains.

The commission also recommended that the legislature, at its next session, reconsider the railroad's request for a more realistic application of the gross receipts tax principle by giving greater recognition to net income and return on investment. The people of the state, the commission pointed out, should be given an opportunity, through their elected representatives, to extend such important relief to the railroads before service is completely abandoned. The traveling public was admonished that if modified passenger service is to continue beyond the period stipulated, the need for continuation could best be demonstrated by patronage of the service. *Re Maine C. R. Co. R. R. No. 3481, January 14, 1960.*

Other Recent Rulings

Amortization of Excess Purchase Price. The Wisconsin commission held that a gas company's acquisition of the net assets of another gas company would serve the public interest only if the excess of the

purchase price over the net original cost of such assets would be written off over a reasonably short period by charges below the line of fair return. *Re Milwaukee Gas Light Co. 2-U-5285, January 15, 1960.*

PUBLIC UTILITIES FORTNIGHTLY

Rate Increase after Dial Conversion. The Minnesota commission has authorized a telephone company to put into effect increased rates sufficient to afford a rate of return of 5.78 per cent, as soon as a dial conversion program is completed. *Re Northland Teleph. Co. Docket No. M-4608, January 18, 1960.*

End Use of Natural Gas. The Federal Power Commission held that it could properly consider the end use of proposed direct purchases by an electric company from a natural gas pipeline where it would not be in the public interest for the pipeline to commit a substantial portion of its reserves to one customer for one type of service in view of the pipeline's limited reserves available for the expanding requirements of its whole service area. *Re El Paso Nat. Gas Co. Docket No. G-12580, January 26, 1960.*

No Denial of Hearing. The Federal Power Commission rejected a contention advanced by a natural gas producer seeking reconsideration of a rate order that the producer had been deprived of a fair hearing because the commission had allegedly made a contrary ruling in a later and different proceeding. *Re Pan American Petroleum Corp. Docket No. G-8697, January 28, 1960.*

Probative Evidence for Certificate. In a certificate proceeding by a private carrier for common carrier authority, the Colorado supreme court ruled that evidence offered by witnesses satisfied with the private carrier service had probative force on the question of public convenience and necessity for the broader authority, where such evidence tended to establish the nature, extent, volume, and

general character of the carrier's business. *Ephraim Freightways, Inc. v. Colorado Pub. Utilities Commission et al. 347 P2d 960.*

Apportionment of Hauling Expenses. The California commission pointed out that the correct apportionment of expenses between terminal and line-haul categories is important since the greater proportion of expenses assigned to line haul, the lower is the total intrastate expense. *Re Freight Rates, Decision No. 58226, Application No. 38557, April 7, 1959.*

Municipal Water Plant Return. The Wisconsin commission approved municipal water plant rates which were calculated to yield a return of approximately 5.5 per cent. *Re City of Watertown, 2-U-5294, January 8, 1960.*

Competitive Minimum Rate. Authority to charge less than an established minimum rate may be granted a motor carrier only as a remedy for an unusual situation and should not be granted where it will enable a carrier not merely to meet competition but effectively to throttle it, the California commission declared. *Re Paxton et al. (Delair Truck Co.) Decision No. 59611, Application No. 41515, February 1, 1960.*

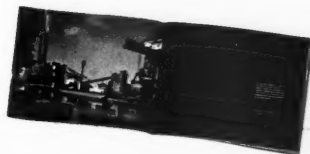
Proof of Damages. A complainant seeking damages where there has been a violation of tariff provisions need not prove damages, the California commission pointed out, since the utility is bound by law to observe its published tariffs. *Chromcraft Corp. v. Davies Warehouse Co. Decision No. 59616, Case No. 6101, February 1, 1960.*



GRAND TOWER POWER STATION CENTRAL ILLINOIS PUBLIC SERVICE COMPANY 210,000 kw—4 Units

Power in Illinois...

The center of United States population has been moving steadily westward and has recently reached a point near Olney, Illinois, a community served by Central Illinois Public Service Company. The trend of industry to follow population movements is illustrated by the rapid increase in industrial activity in newly developed areas. Foreseeing this trend, Central Illinois Public Service Company has engaged in an expansion program which added 100,000 kw capacity in 1958 and will add another 200,000 kw by 1960. Continually experiencing higher and higher load requirements from large power consumers, the company's recent expansion program has truly been tuned to the future.



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*Vice President and General Manager,
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Employment Supervisor, Gas Company

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Training Assistant, Electric & Gas Company

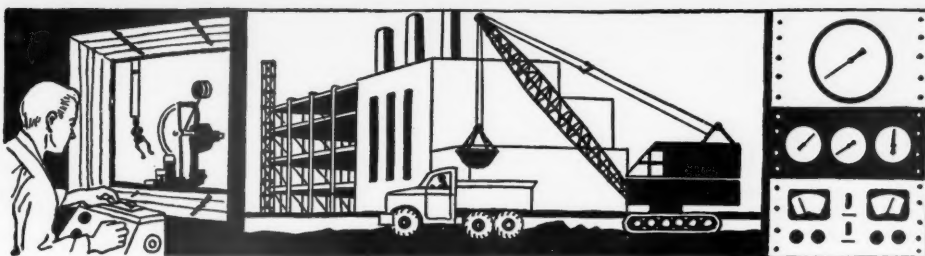
Those in charge of employee education or training may obtain further information from:

PUBLIC UTILITIES REPORTS, INC., Publishers

332 Pennsylvania Building



Washington 4, D. C.



Industrial Progress

Washington Natural Gas Plans \$6,000,000 Program

WASHINGTON Natural Gas Company has expended \$23,248,100 in new plant and construction facilities since 1955, more than doubling the book plant value for the previous 82 years of operation, President Charles M. Sturkey announced in the 1959 Annual Report to stockholders. Therm gas sales in the past four years have increased more than 8.5 times over 1955, while customers have increased 33 per cent.

Mr. Sturkey predicts that there will be a population increase of 257,000 by 1970 in the 28 Puget Sound communities served by his company. Industrial development in the past three years is typified by 60 examples of factories which either have planned to locate, or already have located within the state, representing a total investment exceeding \$2.5 billion. A 1960 new construction program in excess of \$6,000,000 is planned by the company to meet increasing residential and industrial demands, Mr. Sturkey said.

Gas Industry Leader Sees Big Gains in Home Market During The Sixties

GAS-EQUIPPED homes in the United States will increase by at least one-third during the "Sizzling Sixties," the president of the American Gas Association said recently at the annual meeting of the Mid-West Gas Association in St. Paul, Minnesota.

Walter H. Ligon, president of both A. G. A. and the Nashville Gas Co., Nashville, Tenn., told industry leaders that the nation's 1,350 gas utility companies expect to add more than 10 million new residential customers by 1970. He said 29½ million homes currently are served with gas.

Mr. Ligon added that the forecast

includes both new homes and conversion installations in existing homes now using other fuels. He said that the estimate is based on such solid factors as population growth, new home building, urban development, and the rising per capita consumption of energy.

The A. G. A. president cautioned gas company executives against under-estimating the role of competition which will bear very directly on what the gas industry will achieve in the next 10 years.

Philadelphia Electric to Energize Power Line Using Aluminum Towers

AN eight-tower section of a power transmission line linking Chichester, Pa., with the Eddystone generating station of Philadelphia Electric Company, represents the nation's first use of a tower line employing all-aluminum structures.

The eight towers, part of a group of 20 designed and fabricated by Aluminum Company of America for double-circuit 220 KV service, comprise the initial mile of Philadelphia Electric's six-mile 132 KV line from its Chichester substation to the Eddystone station. Completed January 27, 1960, the line was placed in service in February.

After completion of the twelve remaining aluminum towers, scheduled for mid-1960, the line's other circuit will perform a second function; linking Philadelphia Electric Company with neighboring utilities to comprise part of a ten-million kilowatt interconnection of utilities in Pennsylvania, Maryland, and New Jersey.

Aluminum towers were specified by the utility for this line on the basis of cost. Their total service-life cost is expected to show savings over the use of steel towers, reflecting lower erection expense and elimination of

painting, a frequent necessity for steel structures in highly industrial atmospheres.

Royal Precision Announces New Modular Data Processing System

ROYAL Precision has announced a new, modular electronic data processing system. The fully-transistorized RPC-9000 is the latest product of the Royal Precision Corporation, and joins the growing family of electronic computer systems marketed by Royal McBee, co-owner of Royal Precision. According to the announcement, it incorporates many advanced computer design features and provides automatic "in line" records-processing, a new concept in electronic data processing. Data is accepted in random order, and all affected records are automatically up-dated in a single uninterrupted sequence of operations.

The basic system includes: a central processing and control unit which operates in microseconds, performs the calculations, controls the program, and searches the external memory tape; a continuous magnetic tape file for data storage; an input-output tape typewriter system that reads paper tape at 60 characters per sec-

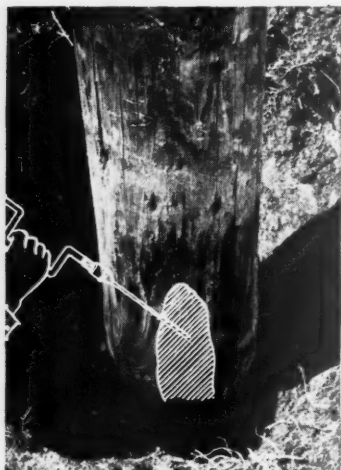
(Continued on page 22)

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Assistant Treasurer required by nationwide, multi-service utility corporation, capable of general supervision of accounting department, Federal and State tax returns, general treasury functions, proficient in rate case work and familiar with Uniform Systems of Accounts. Only applicants stating education, experience, present duties and salary will be considered for permanent position offering opportunity for advancement to top position in short period with appropriate remuneration and benefits. This is a splendid opportunity for the right man.

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After boring, a specially designed Shell Thickness Indicator is used to evaluate the remaining wood strength in relation to the load. If the pole can be saved, the OSMOSE Hollow Heart treatment is applied. This consists of literally flooding cavities with a highly concentrated solution of toxic OSMOSALTS suspended in water. Decay is stopped in its tracks. Your poles remain sound for years and years more of safe, money-saving service.

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SERVING UTILITIES SINCE 1935

INDUSTRIAL PROGRESS—(Continued)

ond, and punches tape at 30 characters per second.

Optional high-speed input-output units also available include: a 400 cards-per-minute photoelectric reader for rapid input of data contained in 80-column punched cards; a 500 characters-per-second bi-directional photoelectric paper tape reader; a 300 characters-per-second tape perforating unit; a 150 lines (of 120 alpha-numeric characters each) per minute printer; a high-speed 666 or 1,000 lines (of 120 alpha-numeric characters each) per minute printer; additional tape typewriter systems for on-line or off-line use and additional paper tape punch/read on-line units.

Information can be entered into the computer from punched paper tape, punched cards, or through the typewriter keyboard. 43 "commands" provide programming flexibility. No binary conversion is necessary for machine computation.

The RPC-9000 has been application-engineered for the full range of data processing needs, including payroll, inventory control, production control, accounts receivable and payable, sales analysis and forecasting. Other specialized data processing requirements can be handled with equal facility.

The RPC-9000 is available on lease, lease with option to purchase, or purchase.

Columbia Gas to Acquire 800 U.S. Compact Cars

THE Columbia Gas System plans to acquire 800 U. S. compact cars, according to a recent announcement.

Operating in a seven state service area, the Columbia System serves directly and indirectly over 3,000,000 people and over 2,500 industries. From its three main operating headquarters at Pittsburgh, Pennsylvania; Columbus, Ohio; and Charleston, West Virginia; the System operates vehicle fleets totaling 3,650 cars and trucks.

George S. Young, president, announced that Columbia Gas would begin moving U. S.-made compact cars into the System's motor vehicle fleets immediately. He added, that under the System vehicle replacement policy, it will require four years for the 800 compact cars to be integrated into the System's fleets. Automobiles are usually replaced on the basis of three to four years service and 45,000 miles of use.

The combined savings in initial acquisition costs and gasoline con-

sumption will approximate \$340,000 for the four year period, according to the announcement. After the fourth year, when the compact cars will be fully integrated into the fleets, annual savings are expected to approximate \$125,000.

Columbia's Service Corporation, in cooperation with the System's operating companies, studied the use of both American and European small cars at great length. Finally, it was determined that in addition to acquisition and operating economies, the U. S. compact cars more completely satisfied operating requirements.

Because of the System's diversity, Columbia Gas' vehicles are used in the performance of a wide variety of tasks. The U. S. compact autos will see service in practically every phase of natural gas operations; including production, transmission, underground storage, land and leasing, customer service and business promotion.

The System, therefore, does not intend to limit its acquisitions to any one particular make but will probably integrate units of all five makes into its fleet. Chrysler's Valiant, the Ford Falcon, General Motor's Corvair, the Studebaker-Packard Lark and American Motor's Rambler, all proved of equal merit in meeting Columbia's operating needs.

G-E Ships Highest-Rated Mobile Substation Ever Built

THE highest-rated mobile substation ever built—a 115 Kv, 17,000 Kva unit—has recently been shipped by General Electric's Power Transformer Department at Pittsfield, Mass.

The trailer-mounted unit, bound for the Public Service Company of New Mexico, is a complete power substation—large enough to fulfill the normal power requirements of a city of 25,000 persons. The unit will be used to bypass permanent substations while regular equipment is being serviced or modernized.

The complete mobile substation, without its tractor, is 42.5 ft. long, 8 ft. wide, 13.5 ft. high and weighs 41 tons. Its three-phase, forced-oil cooled transformer has dual high-voltage ratings of 46 and 115 Kv which can be stepped down to 4160Y/2400, 12470Y/7200 or 13800Y/7470 volts. The unit's rating is 17,000 Kva at 65C rise, the equivalent of a 15,000 Kva unit at the conventional 55C rise. In addition to the transformer, the mobile substation contains a high-

INDUSTRIAL PROGRESS—(Continued)

voltage disconnect switch, fuses, lightning arresters, a circuit breaker and complete relaying and control equipment.

G-E indicated that the current trend toward economical, increased capacity mobile substations is expected to continue and the company is prepared to furnish similar mobiles which will be rated up to 20,000 Kva, 115 Kv.

NEMA Forecasts Another Big Year for Sales of Electric Ranges

THE Electric Range Section of the National Electrical Manufacturers Association (NEMA) forecasts electric range factory shipments of 1,750,000 units for 1960, as the Section moves into the second big year of its new electric range promotion campaign.

This optimistic outlook is based mainly on the highly successful year for sales of electric ranges in 1959. Shipments of free-standing electric ranges in 1959 hit 930,000 units, a 14.8 per cent increase over 1958, while shipments of built-ins reached 750,000 units for a gain of 37.8 per cent over 1958.

The theme of the 1960 program which includes a stepped-up program of consumer and trade publicity and planned utility promotional activity, is "The Big Change Is To An Electric Range—Electricity Is Your Better Way To Cook."

The 1960 program is geared to provide even greater impetus to the highly successful program initiated in 1959 to promote and sell electric ranges. Last year, 166 utilities tied-in their local range promotions with the national campaign of the Electric Range Section of NEMA.

As in 1959, the 1960 program will aim to educate the consumer on the benefits of cooking electrically and thereby sell electric ranges and increase utility load. The three-pronged plan to attain this goal will provide: 1) consumer and trade information through the special communications center; 2) close cooperation once again with electric utilities to promote electric range campaigns and 3) promotional material.

Promotional tools offered to utilities are a display streamer, a 6-page brochure listing the advantages of electric cooking, a 16-page tabloid-size newspaper supplement, mats and photo kits.

In addition, the 1960 year 'round electric range program will coordinate its promotional efforts with other

groups on a national scale. The NEMA Electric Range Section is again working with Edison Electric Institute to coordinate activities of both for maximum effect and will continue to vigorously support the EEI Live Better Electrically Program in 1960. All material supplied by the NEMA Electric Range Section will continue to carry the LBE emblem.

Middle West Service Opens Office in Washington, D. C.

MIDDLE West Service Company, a business engineering and management company (of Chicago), has recently announced the opening of offices at 1725 K Street, N. W., Suite 511, Washington 6, D. C. Harold E. Marmaros has been appointed Resident Manager for the new offices according to the announcement made by Middle West Service Company President, Mr. Jay Samuel Hartt.

Mr. Marmaros has been associated with Middle West Service Company for two years having been previously associated with engineering firms specializing in public utility design, construction, operations and management.

Midwest Publishes Brochure On Nuclear Piping

MIDWEST Piping Company's facilities for the fabrication and erection of critical piping for the nuclear age as well as their facilities for manufacturing welding fittings for nuclear piping systems are described in a new 24-page brochure just published.

Titled "Critical Piping for the Nuclear Age," the profusely-illustrated booklet shows operations at Midwest's manufacturing and fabrication plants during production of welding fittings and fabricated assemblies for nuclear installations. Special emphasis is given to the welding techniques and quality control required for piping of such a critical nature. Also shown are nuclear piping installations erected by Midwest's field construction department.

Many nuclear facilities for which Midwest furnished piping or components are pictured, including the Atomic Energy Commission's Manhattan Project at Oak Ridge; the Dresden Nuclear Power Station; the Navy's atomic-powered cruiser, aircraft carrier and submarine; Kyger Creek Power Station; Knolls Atomic

(Continued on page 26)

ARMY and NAVY Also Use JAQUES Hydraulic EARTH AUGERS



*Pole-setting attachment optional.

ARMY REPORT ON JAQUES KJ-254**

"There was a performance test on Pilot Model (Jaques Earth Auger), Model KJ-254, built by Texoma Enterprises, Inc. This test performed in accordance with Military Specification Mil-A-516B, paragraph 3.9 through 3.9.2.

"This test was performed in sandy, gravelly, red clay, hard and dry to blue silty clay at bottom of hole. Average time per hole for 25 consecutive holes was 78 seconds. Average depth of holes was 67.2 inches. Machine functioned at normal temperature."

**JAQUES newly developed Model TJ-254 is 2 1/2-TIMES FASTER than Model KJ-254!



Some of 29 JAQUES TJ-254's NAVY bought.

WHY BUY JAQUES?

1. JAQUES Augers have finger-tip, feather-touch controls... only 3 primary adjustments for easy, simple operation... Mount on standard trucks...
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Completely unattended, 6000 KW Electro-Motive Plant is on the line at full power in ninety seconds or less

A signal from a central dispatching point brings Electro-Motive Peaking Power on the line where it's needed—near the load. Within 90 seconds from the push of a button, you can satisfy peaking or spinning reserve requirements. It starts, synchronizes, goes on the line, and steps up to full power output *completely unattended*. No warm up period is needed, no prior preparation is required.

The Electro-Motive Peaking Plant is an *outdoor*, sound-deadened, weather-proofed plant ready for easy installation anywhere on the system—right at the step-down substation serving the load. No expensive building or foundation work is required.

Unitized, self-contained design allows:

- low investment cost.. \$85 per KW, f.o.b. factory
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- flexibility in meeting site limitations
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An Electro-Motive 6000 KW Peaking Plant can be operating on your system in less than 5 months time—4 months lead time plus 10 days for installation.

For complete details, see your Electro-Motive representative.



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(Continued from page 23)
Power Laboratory, and others.

A copy of the new brochure is available free from Midwest Piping Company, Inc., 1450 S. Second St., St. Louis 4, Missouri. Bulletin 60-A.

Products for the Plant

INGERSOLL-RAND Company has published a new booklet entitled, "Products For The Plant," which is available to anyone with an interest

in the selection and supervision of plant equipment.

Standard reciprocating, axial-flow and centrifugal air compressors, centrifugal pumps, steam condensers, steam-jet ejectors, vacuum pumps, air hoists, and air and electric tools are all covered in this eight-page booklet. Representative machines in each product line are illustrated and outstanding design features noted. This booklet also gives the size and capacity ranges of the many units, as well

as recommended applications.

For a copy of this booklet, Form 223, contact your local Ingersoll-Rand branch office or write direct to Ingersoll-Rand Company, 11 Broadway, New York 4, N. Y.

Reading Body Works Adds to Series of Utility Bodies

READING Body Works, Inc., Reading, Pa., has added a new series of job-planned utility bodies for the 1960 Chevrolet and GMC three-quarter ton chassis.

The new bodies called the 964 Series, are six-inches longer than last year's models. Front storage compartments have been increased in length and lowered to complement the streamlined design of the new Chevy's and GMC's. The new bodies measure 96-inches in over-all length to conform with increased cab-to-axle dimensions of these makes, a company spokesman said.

New body models for the 1960 lines of Ford and Dodge trucks have also been introduced by Reading.

\$66,000,000 Program Planned By Northern Indiana Pub. Serv.

NORTHERN Indiana Public Service Company will invest \$66 million in 1960-1961 in the expansion and modernization of facilities, Dean H. Mitchell, NIPSCO president, told stockholders in the utility's annual report released recently.

Mr. Mitchell said the multi-million dollar construction program is designed to keep ahead of the ever-increasing demand for gas and electric service in northern Indiana, and to achieve greater efficiency and economy of operation.

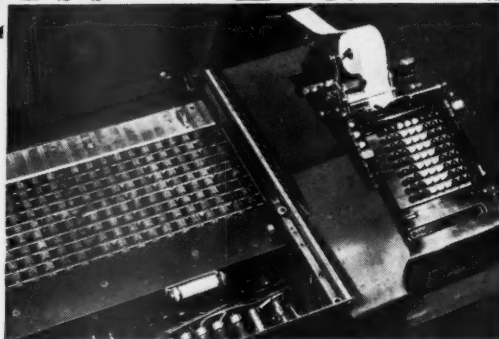
The report cited the construction of a new electric generating station in the Burns Harbor area, between Gary and Michigan City as the largest project in the two-year construction program. Preparatory work on the site began last November. It is expected that the plant's initial generating unit will go "on the line" in December 1962, adding 183,000 kilowatts of capacity to the company's electric system.

Other electric projects in the two-year program include the construction of a 138,000 volt substation at Warsaw, and the building of a new 138,000 volt steel tower transmission line between Warsaw and Plymouth. In addition, several 34,500 volt transmission lines will be converted to 69,000 volts, while primary distribution voltages will be raised and transformer

many steps vs. "ONE"



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While present day office machines are far from "primitive", their use in compiling rate bill analyses is un-economic and slow compared to our "One-Step" Method.

Tracing the pattern of consumption with our monthly rate-bill analyses, puts all the threads for accurate future planning in the hands of rate engineers. Besides, this always up-to-date monthly data is invaluable in preparing and presenting rate cases.

Switching over to the "One-Step" Method can be accomplished as simply as running an adding machine tape. Full details are in our booklet, "One-Step" Method of Bill Analyses.

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INDUSTRIAL PROGRESS—(Continued)

capacity increased throughout the system to provide greater load carrying capacity.

Kelley Named Executive Aide By Burns and Roe

JOHN B. KELLEY has been appointed assistant to the executive vice-president at Burns and Roe, Inc., New York City engineers and constructors. In addition to other assigned duties, he will coordinate foreign operations of the company, currently celebrating its twenty-fifth anniversary.

In his former position as project manager and assistant to the director of the defense and aeronautical facilities division, Mr. Kelley directed design, engineering, and siting for the SAGE (Semi-Automatic Ground Environment) system for Burns and Roe. He has participated in many other of the company's defense assignments, and worked on such power plants as Jersey Central Power & Light Company's Raritan river plant, Orange & Rockland Utilities' Lovett plant, and steam and power facilities for the U. S. Army's Picatinny Arsenal. He also served as project engineer for a 15,000-kw gas turbine power plant, and has been in Japan and Saudi Arabia on foreign power projects.

Tampa Electric Expects to Double Facilities in Next Five Years

DUE to the anticipated growth in its service area, Tampa Electric Company will need to almost double its facilities within the next five years, President William C. MacInnes stated recently in an address before the New York Society of Security Analysts in New York City.

Mr. MacInnes estimated construction requirements for the Tampa utility firm between now and the end of 1965 at \$150,000,000. This is nearly double the firm's plant investment of \$161,000,000, which has come into being during the 60 years that Tampa Electric has been in operation.

Boston Edison to Spend \$30,000,000 in 1960

PRESIDENT and Chairman of the Board Thomas G. Dignan, of Boston Edison Company, announced recently that the company's capital expenditures in 1960 will exceed \$30,000,000. This compares with \$27,000,000 spent in 1959.

VEPCO to Build 200,000 kw Hydroelectric Station

THE Virginia Electric and Power Company has been issued a license by the Federal Power Commission to build a 200,000 kilowatt hydroelectric station on the Roanoke river near Gaston, N. C., Vepco President A. H. McDowell, Jr., announced recently.

Construction of the \$50,000,000 project will start immediately and the completion date has been set for the spring of 1963, he added.

Vepco already has a 100,000 kilowatt hydroelectric station on the Roanoke river at Roanoke Rapids, N. C. The new project will be constructed eight miles upstream from the Roanoke Rapids dam.

When it goes into operation, the Gaston power station will be Vepco's tenth major generating plant. The company opened the \$31,400,000 Roanoke Rapids hydroelectric station in 1955.

(Continued on page 28)

This advertisement is neither an offer to sell nor a solicitation of offers to buy any of these securities. The offering is made only by the Prospectus.

March 31, 1960

Savannah Electric and Power Company

New Issue

87,950 Shares Common Stock

(\$5 Par Value)

Holders of the Company's outstanding Common Stock are being offered rights to subscribe at \$24.50 per share for the above shares at the rate of one share for each 13 shares of Common Stock held of record on March 29, 1960. Subscription Warrants will expire at 3:30 P.M., Eastern Standard Time, on April 18, 1960.

The several Underwriters have agreed, subject to certain conditions, to purchase any unsubscribed shares and, both during and following the subscription period, may offer shares of Common Stock as set forth in the Prospectus.

Not a New Issue

100,000 Shares Common Stock

(\$5 Par Value)

Price to the Public

\$27 per share

Copies of the Prospectus covering the above offerings may be obtained from any of the several underwriters only in States in which such underwriters are qualified to act as dealers in securities and in which the Prospectus may legally be distributed.

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\$24,500,000 Program Planned By Central Ill. Public Service

CENTRAL Illinois Public Service Company, Springfield, Ill., spent about \$23,500,000 during 1959 on new construction and expansion of electric and gas facilities, M. S. Luthringer, president, told stockholders in the company's annual report.

Expenditures in 1960 are expected to amount to \$24,500,000.

Northwestern Bell Plans \$100,000,000 Construction Program in 1960

NORTHWESTERN Bell Telephone Company's construction outlays for 1960 will total about \$100,000,000, the largest annual capital expenditure in the company's history, according to A. F. Jacobsen, president.

Northwestern operates in Minnesota, North and South Dakota, Iowa and Nebraska. Over the past 10 years circuits connecting towns and cities in the service area have grown from 687,000 miles to 1.7 million miles.

Northwestern to Spend \$2,500,000 On Expansion This Year

THE year 1960 will be another busy construction year for Northwestern Public Service Company, Huron, South Dakota. During the year, the company will spend \$2,500,000 on construction projects necessary to extend gas and electric facilities to serve new areas and new customers, and improvements necessary to keep pace with the increasing requirements of electric and gas users.

Major electric projects scheduled for the year are extensions and improvements on the transmission and distributions systems. In many areas new and larger capacity transformers, regulators and capacitors will be installed where customer usage calls for increased capacity. In the communities in which it distributes natural gas, Northwestern this year will install considerable footage of new gas mains and service lines, as well as make improvements on present facilities to provide for increased use of gas.

Multiport Relief Valve Bulletin Offered by Cochrane

A BULLETIN entitled "Cochrane Multiport Relief Valves" is available from Cochrane Corporation.

This bulletin describes and illus-

trates the complete line of Cochrane multiport relief valves for automatic safe relief of overpressure in steam, air, and gas systems up to 250 psig. Multiport relief valves have from 3 to 21 internal spring-loaded valve discs which are adjustable for specific line pressures. Overpressure forces these valves open gradually. This action produces both automatic safety relief and pressure regulation.

Publication No. 5200-A, "Cochrane Multiport Relief Valves," will be sent on request to Cochrane Corporation, 17th Street below Allegheny avenue, Philadelphia 32, Pa.

AGA President Urges Stepped-up Pace in Research

EXPANDED and accelerated gas industry research was urged recently by Wister H. Ligon, president of the American Gas Association.

Totally new markets for gas can be opened by greater exploration of "unknown or little-known areas of energy utilization," he told the 25th annual meeting of the Gas Appliance Manufacturers Association convening in White Sulphur Springs, West Virginia. He called for "more research and product development in every branch of the industry, and more new and exciting equipment to capture the imagination of the consumer."

The AGA president cited the "many excellent research and development programs" now conducted by gas appliance manufacturers. "These vital activities have given us tremendous strength in the manufacturing end of the industry," he said. "They present dramatic evidence of our manufacturers' faith in the future of gas."

Declaring that the gas industry "must move full-speed ahead in research to help assure continued growth in what promises to be the most competitive period in gas history," Mr. Ligon noted that the industry "is not starting out from scratch" in this field.

"We emerged from the 'Fabulous Fifties' with the strongest research programs ever," he said. "Our pace is swift, and we are getting more than our money's worth from every dollar channeled into research."

Mr. Ligon reported that the American Gas Association, under its cooperative PAR Plan (Promotion, Advertising and Research), has budgeted \$2.5 million for research during 1960. This year's outlays represent nearly a 40 per cent increase over 1959's expenditures of \$1.8 million.

He told appliance industry leaders that PAR-supported research now is conducted by some 18 research agencies, universities, government bureaus, and cooperating manufacturers and gas companies. More than 60 projects currently are underway in basic and applied research.

Mr. Ligon, who is president of the Nashville Gas Co., Nashville, Tenn., is a past chairman of A.G.A.'s PAR Committee.

New Delta-Star Consultant

MELVIN L. MANNING, dean of engineering, South Dakota State College has been retained by Delta-Star Electric Division, H. K. Porter Company, Inc., Chicago, Illinois as a transformer consultant. Mr. Manning's services will bring highly specialized assistance to the Division's already intensified distribution transformer research and development program.

Mr. Manning started at Westinghouse as a motor design engineer and was later transferred to the transformer division in charge of the high voltage laboratories. Later he became associated with the Kuhlman Electric Company as chief engineer and with the McGraw-Edison Company as Development Engineer.

R-R Introduces Univac Compatible High-speed Printing Unit

A high-speed printing unit that is compatible with both the Univac line of tape-fed computer systems and those of other manufacture was announced recently by the Remington Rand Univac Division of Sperry Rand Corporation. It operates at 600 lines a minute. Up to now, it has been applicable only to the Univac line of computers.

Called the Univac Compatible high-speed printer, the equipment is comprised of a tape reader, a control unit and a printer. It functions on the "off-line" principle, which means that the computer itself is not tied up while the printing is being done, and is thus free for other computational work.

The printer will rent for \$3,500 a month or it may be purchased at \$195,000, the company said. Deliveries will begin in eight months.

The Univac Compatible printer automatically reads, checks and prints out information from the magnetic tape on which the computer has recorded its calculations.

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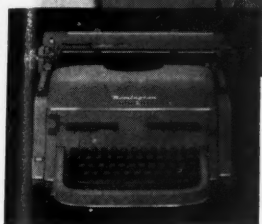
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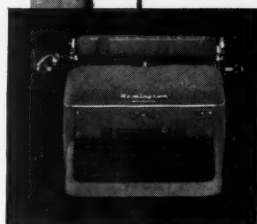
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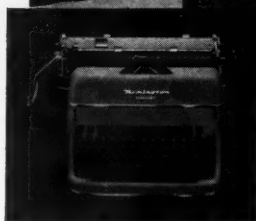
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